


# Questions on lesson one



Questions signed by  have been taken from the school book.

## 1. Choose the correct answer :

- ..... are from the artificial sources that are used before inventing the electric lamps.
  - Candles
  - Oil lamps
  - Fluorescent lamps
  - (a) and (b)
- The electric lamps represent a constant source of light that is .....
  - clear.
  - bright.
  - free from smoke and odor.
  - (a) , (b) and (c).
- The electric lamp converts the electric energy into ..... energy.
  - kinetic
  - light
  - sound
  - magnetic
- All the following are from the components of the light bulb except .....
  - the filament.
  - the glass bulb.
  - two points of connection.
  - the base of the light bulb.
- The filament of the light bulb is made of ..... (Fayoum 2017)
  - tungsten.
  - copper.
  - iron.
  - aluminium.
- The filament of the light bulb is made of tungsten because it has .....
  - low density.
  - low melting point.
  - high melting point.
  - no conductivity. (Kafr El-Sheikh 2017)
- ..... allow the electric current to transfer from the lamp base to the filament.
  - The tungsten filament
  - The argon gas
  - Copper and lead wires in the light lamp
  - The base of the light bulb
- All the following are from the components of the fluorescent lamp except .....
  - tungsten filaments.
  - points of connection.
  - two thick copper wires.
  - glass tube.
- Which of the following gases is found in the fluorescent lamp but not in the light bulb ? ..... (Sharkia & Beheira 2017)
  - Neon.
  - Argon.
  - Mercury vapour.
  - Water vapour.



## Unit Two

10. The glass tube of the fluorescent lamp contains .....  
 a. neon gas. b. argon gas.  
 c. argon gas and a little of mercury vapour.  
 d. hydrogen gas. (El-Menofia & Damietta 2016)
11. The inner surface of the tube of the fluorescent lamp is covered with ..... (Ismailia 2016)  
 a. mercury. b. a phosphoric material.  
 c. copper. d. tungsten.
12. There are two points of connection at each tip of the fluorescent lamp .....  
 a. to react with tungsten filament.  
 b. to connect the lamp to electricity.  
 c. to prevent air from reaching the filament.  
 d. (a) , (b) and (c).
13. When the electric lamp connected in parallel with others in the electric circuit, the light intensity ..... (Dakahlia 2017)  
 a. decreases. b. increases. c. doesn't change.  
 d. decreases sometimes and increases another times.
14. All the following gases are used in the electric lamps except ..... (Damietta 2015)  
 a. argon. b. atmospheric air.  
 c. mercury vapour. d. (a) and (c).
15. We need a light bulb, battery and connecting wires connected together in a closed continuous path to .....  
 a. obtain a continuous electric circuit.  
 b. make a simple electric circuit.  
 c. make the bulb lights up. d. (a) , (b) and (c).
16. When we connect more than one bulb in series to an electric source, the light intensity of the bulbs ..... (Aswan 2017)  
 a. decreases. b. increases.  
 c. does not change. d. (a) , (b) and (c).
17. When we connect more than one bulb in parallel to an electric source, the light intensity of the bulbs ..... (Matrouh 2017)  
 a. decreases. b. increases.  
 c. does not change. d. (a) , (b) and (c).



18. If we have three light bulbs and we need to get high light intensity, so we must connect them .....
- a. in series. b. in parallel.  
c. (a) and (b). d. without copper wires.
19. When we unscrew a bulb from those that are connected in series, .....
- a. the unscrewed lamp only will be turned off. c. no lamp will be turned off.  
b. all lamps still lighting. d. all lamps will be turned off.
20. When an electric lamp which is connected in series with the other lamps burns out, .....
- a. the light intensity decreases. b. the light intensity increases.  
c. all lamps turn off. d. no correct answer.
- (Sharkia & Ismailia 2017)
21. In houses, .....
- a. lamps and all other electric machines are connected in parallel.  
b. lamps are connected in parallel and other machines are connected in series.  
c. lamps are connected in series and all other machines are connected in parallel.  
d. lamps and all other machines are connected in series.
22. The light bulbs are connected in ..... in the house.
- a. parallel b. series c. parallel and series  
d. series in some places and in parallel in the other places.
23. In the decorative lights, if one or more lamps burn out the other lamps do not turn off, because .....
- a. lamps are used in religious celebrations.  
b. lamps are connected in parallel.  
c. lamps are connected in series.  
d. (a) , (b) and (c).

## 2. Choose from column (B) what suits in column (A) :

(A)	(B)
1. Light bulb	a) is in series.
2. Connecting electric lamps in the house	b) is in parallel.
3. The filament of the light bulb	c) changes electric energy to light energy. d) made of nichrome wire. e) made of tungsten wire.

1. ....

2. ....

3. ....



3. Put (✓) in front of the correct statement and (×) in front of the incorrect one, then correct it :

1. The Sun is the main source of light on Earth. ( )
2. Candles and oil lamps are artificial light sources, while electric lamp is a natural light source. ( )
3. Electric lamp converts kinetic energy into light energy. ( )
4. The light bulbs are the most popular source of natural light. ( )
5. The light energy is produced from the light bulb when the electric current flows through the glass bulb. ( )
6. Electric bulbs are used in lighting houses. ( )
7. The glass bulb of the electric lamp contains atmospheric air. ( )
8. The swelling (glass bulb) of a light bulb contains oxygen gas. ( )
9. The filament of the light bulb is made of aluminium. (South Sinai 2017) ( )
10. The filament of the electric bulb is made of a metal that has low melting point. (Kaf El-Sheikh 2017) ( )
11. Argon is used instead of air inside the bulb of the electric lamp to protect the filament from burning. ( )
12. The base of the light bulb connects the lamp with electricity. ( )
13. Spiral base has two side nails and two pieces of lead. ( )
14. The spiral base of the light bulb glows due to passing the electric current through it. (Qena 2016) ( )
15. The fluorescent lamp contains one filament of tungsten. (Dakahlia 2017) ( )
16. Fluorescent lamp contains neon gas. ( )
17. Points of connection of fluorescent lamp connect the lamp to electricity. ( )
18. Fluorescent lamps are called neon lamps, because it contains inert neon gas. ( )
19. When the electric circuit is closed, an electric current will pass through it. ( )
20. Electric lamp and a battery are only required to form a simple electric circuit. ( )
21. When we connect light bulbs in series, the lighting of the bulbs decreases when the number of bulbs increases. ( )





22. In parallel electric circuit, there is no branching routes. ( )
23. In series electric circuit, when one light bulb burns out, the other lamps do not turn off. ( )
24. When we connect light bulbs in parallel to an electric source, the light intensity of the bulbs increases by increasing the number of bulbs. ( )
25. While connecting the lamps in parallel, the lamps are connected one after the other. (Giza 2017) ( )
26. Electric lamps are connected in houses in parallel. (Suez 2017) ( )

#### 4. Write the scientific term of each of the following statements :




- Means of converting the electric energy to light energy. ( )
- The main source of light on Earth. ( )
- The scientist who invented the light bulb. (Cairo 2013) ( )
- It is a coiled thin wire made of tungsten in the light bulb. ( )  
(Suez 2017)
- A part of the light bulb that emits light when electric current passes through it. ( )
- A part of the light bulb that is made of thin glass and contains an inert gas. ( )
- An inert gas that is found in the glass bulb of the electric lamp. ( )  
(Dakahlia 2017)
- It carries the lamp in upright position and connects the lamp to electricity. (Gharbia 2017) ( )
- An element that is used in making the filament of the fluorescent lamp. ( )
- A material that covers the inner surface of the glass tube in fluorescent lamps. ( )
- It is a type of electric lamps that's used in houses, offices, decorating commercial stores. (Fayoum 2015) ( )
- A type of lamps their inner surface is covered with phosphoric material. ( )
- It is a closed and continuous path through which the electric current will pass. ( )







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14. It consists of a battery, a lamp, connecting wires and switch. (.....)  
(Beheira & El-Minia 2017)
15.  A way in which the light bulbs are connected one after another, where the light intensity of the bulbs decreases by increasing their numbers.  
(El-Menofia & Assiut 2017) (.....)
16. A way of connecting the electric lamps in which all the lamps are turned off when one of them burns out.  
(El-Menofia 2016) (.....)
17.  The way, where the bulbs are connected in branching routes and the lighting of lamps is not affected by increasing their number.  
(Ismailia & Aswan 2017) (.....)
18. A way of connecting the lamps and machines in houses. (.....)  
(Aswan 2012)




### 5. Complete the following statements :

- The ..... is the main source of light on the Earth.
- The scientist ..... who invented the light bulb. (Beheira & Dakahlia 2016)
- ..... and ..... are from the artificial light sources.
- ..... represents a clear and bright source of light that is free from smoke and vapour.
- Electric lamps convert ..... energy into ..... energy.
- Electric lamps emit light when ..... passes through them.
-  Some of the types of electric lamps are ..... and .....
- Light bulbs are used for many purposes such as ..... , car lights and .....
-  The light bulb consists of ..... , ..... and .....
-  The filament of the light bulb is made of ..... , because it has high .....  
(El-Menofia & Ismailia 2017)
- The light bulb contains inert ..... gas. (Fayoum 2015)
- The glass bulb of the light bulb is filled with ..... gas instead of .....  
(Gharbia 2017)
- In the light bulb, copper and lead wires allow the electric current to pass from ..... to .....
- There are two types of lamp bases which are ..... base and ..... base.







15. The glass bulb protects the filament from burning, as it contains ..... gas to increase the lifetime of the filament.
16. .... base has a piece of lead, while .... base has two pieces of lead.
17. .... lamps are used in commercial advertisements and lighting houses.
18. The fluorescent lamp consists of ..... , ..... and ..... (Gharbia 2017)
19.  The fluorescent lamp contains the inert ..... gas. (Giza & Beni-Suef 2017)
20. The inner surface of the tube of the fluorescent lamp is covered with ..... material. (Menofia 2015)
21.  The simple electric circuit consists of ..... , ..... and ..... (Damietta 2017)
22. The electric circuit is ..... when all its parts are connected together. (Alex. 2016)
23.  ..... and ..... are two ways of connecting electricity.
24. When connecting many light bulbs in series, the light intensity of the bulbs .....
25. The lighting of the light bulbs does not change if they are connected in the circuit in .....
26. The electric current in the ..... connection has only one route, while it has many branching routes in the ..... connection.
27.  When connecting light bulbs in ..... , the light intensity of the lamps decreases by ..... their numbers.
28. All light bulbs are connected in ..... in the house. (Kafr El-Sheikh 2017)

## 6. Correct the underlined words in the following statements :



1.  The electric lamp converts the electric energy into kinetic energy. (El-Menofia 2017) ( ..... )
2. Light bulbs are natural light sources. ( ..... )
3. Galileo is an American inventor who invented the electric lamp. ( ..... )
4.  The filament of the light bulb is made of carbon. (Assiut 2017) ( ..... )
5.  The electric lamp contains hydrogen gas. (Port Said 2017) ( ..... )








## Unit Two

6. The **filament** of the light bulb connects the lamp to the electricity. (.....)
7. Fluorescent lamp contains the inert **neon** gas. (Beheira 2016) (.....)
8. The tungsten element has a **low** melting point. (.....)
9.  There are two connecting points at each end of the **light bulb**. (Dakahlia 2016) (.....)
10. The inner surface of the tube of the fluorescent lamp is covered with a **carbonic** material. (.....)
11. The simple electric circuit consists of battery, lamp and **an insulator** to connect the battery with the lamp. (Ismailia 2016) (.....)
12. The electric circuit is **open** when all its parts are connected and the electric current passes through it. (.....)
13.  To connect lamps in **parallel**, they are connected one after another. (.....)
14.  The lamps in the electric circuit continue to work when connected **in series** if a lamp is damaged. (.....)
15. There **are different routes** for the electric current to pass through a circuit connected in series. (.....)
16. When we connect more than one bulb in series to the electric source, the lighting of the bulbs **increases**. (.....)
17. The lamps in the decorative lights are connected **in series**. (.....)
18.  The electric lamps are connected in houses **in series**. (Red Sea 2016) (.....)

### 7. Give reasons for the following :


1.  The filament of the light bulb is made of tungsten. (Alex. & Dakahlia 2017)  
.....
2.  The swelling of the electric lamp contains an inert gas instead of air.  
.....
3. The filament of the electric lamp is the most important part in the light bulb.  
.....
4. Copper and lead wires are connected to the filament from one end and connected with the base of the bulb from the other end.  
.....



5. The base of the light bulb is made of a metal not plastic.  
.....
  6.  There are two pieces of lead in the base of the light bulb. (Red Sea 2016)  
.....
  7. The fluorescent lamps are very important in our life.  
.....  
.....
  8. The glass tube of the fluorescent lamp is filled with argon gas.  
.....
  9.  There are two points of connection at each tip of the fluorescent lamp. (El-Menofia 2016)  
.....
  10.  The light bulbs are connected in the house in parallel. (El-Menofia 2017)  
.....
  11. In the decorative lights, if one or more lamps burn out, the other lamps don't turn off.  
.....
  12. Decorative lamps are connected in parallel not in series. (Sohag 2017)  
.....
- 8. What happens if ... ?**
1. There is no glass bulb around the parts of the electric lamp. (Cairo 2017)  
.....
  2.  There is air inside the light bulb.  
.....
  3. The bulb of electric lamp is filled with oxygen.  
.....
  4.  You make the filament of the light bulb from iron. (Kalyoubia 2015)  
.....
  5. The two metallic pieces are not found in the base of the light bulb. (El-Menofia 2017)  
.....
  6. There is no battery in the electric circuit.  
.....
  7. Opening the electric circuit by using the electric switch.  
.....



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8. Many light bulbs are connected in series in an electric circuit.  
.....
9. Many light bulbs are connected in parallel in an electric circuit. (Cairo 2016)  
.....
10. Turning off one light bulb in an electric circuit contains many lamps connected in series. (Dakahlia 2017)  
.....
11. One of the electric lamps burns out, while it is connected in parallel with the others. (Kafr El-Sheikh 2017)  
.....
12.  The electric lamps in the house are connected in series. (El-Minia 2017)  
.....
13. The electric current passes through the tungsten filament in the light bulb.  
.....

**9. What is meant by ... ?**


1. Electric lamp.  
.....
2. Electric circuit.  
.....

**10. What is the function (use) of ...?**

1. The filament of tungsten in the light bulbs. (Giza & Damietta 2017)  
.....
2. The base of the light bulb. (Beheira 2016)  
.....
3. The two copper wires in the light bulb.  
.....
4. The inert argon gas in the fluorescent lamp. (Alex. 2017)  
.....
5. The points of connection in the fluorescent lamp.  
.....
6. The battery in the electric circuit.  
.....



(Fayoum & Sohag 2017)

1.  Connecting electric lamps in series and connecting in parallel (with respect to : Light intensity – Removing one of the lamps from the connection).

(Beheira 2017)

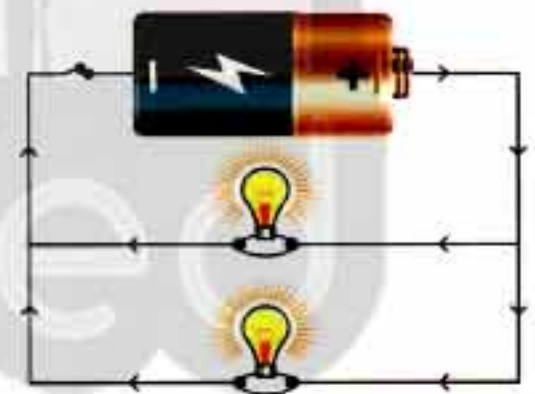
3. The sources of artificial light and the sources of natural light with respect to : Examples.

1. The opposite figure shows the connection of electric bulbs in .....  
a. series. b. parallel.  
c. one of them in series, but the other in parallel.

(Ismailia 2015)

2. If one of the two electric bulbs is damaged,  
the lighting of the other .....

a. will continue.                      b. will turn off.



1. Series electric circuit.

## 2. Parallel electric circuit.



## Unit Two

**14.** The following figures represent two electric circuits (A) and (B).

Answer the following questions :

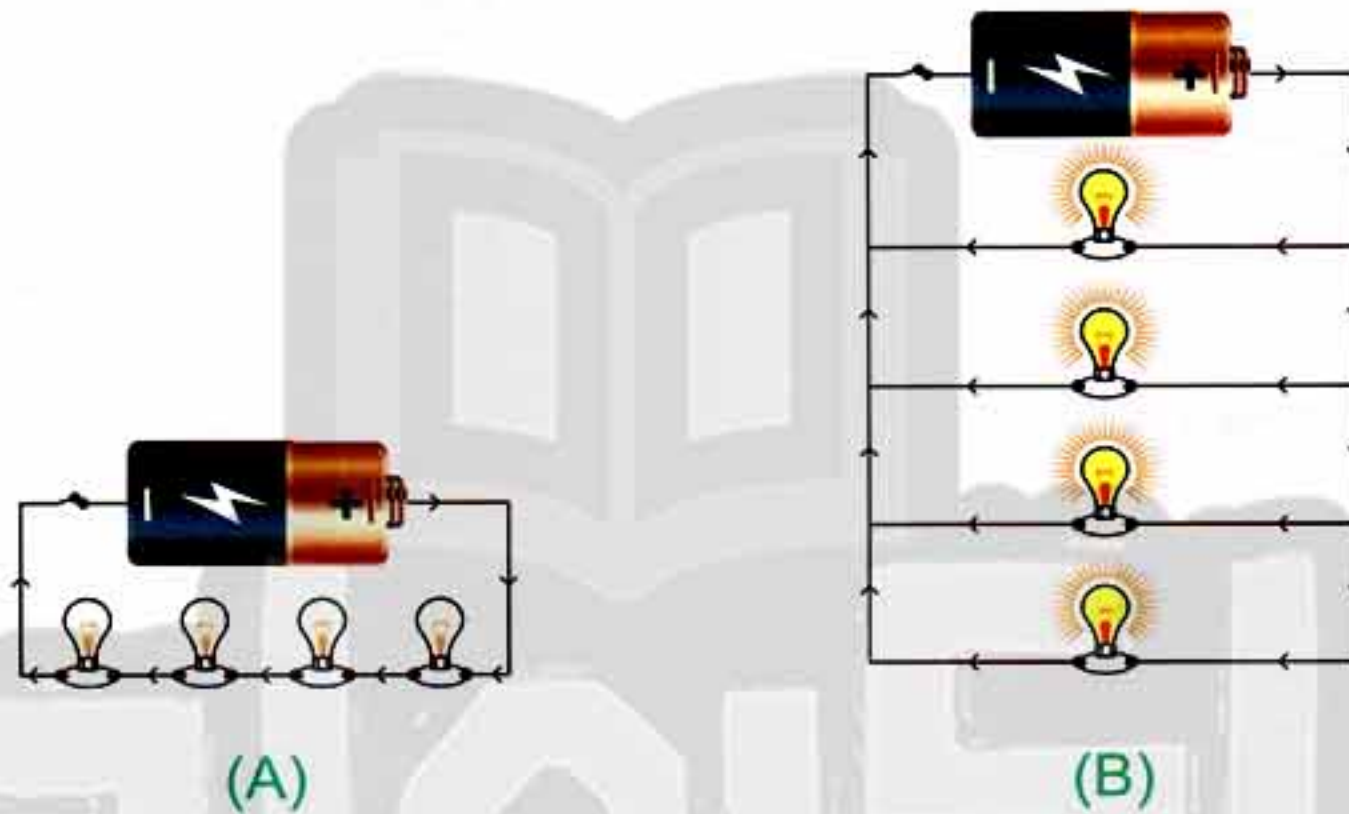
(Port Said 2017)

1. Mention the way in which the light bulbs are connected in each circuit.

.....

2. Which way (A) or (B) could be used to connect the electric lamps in the house ? Mention the reason.

.....



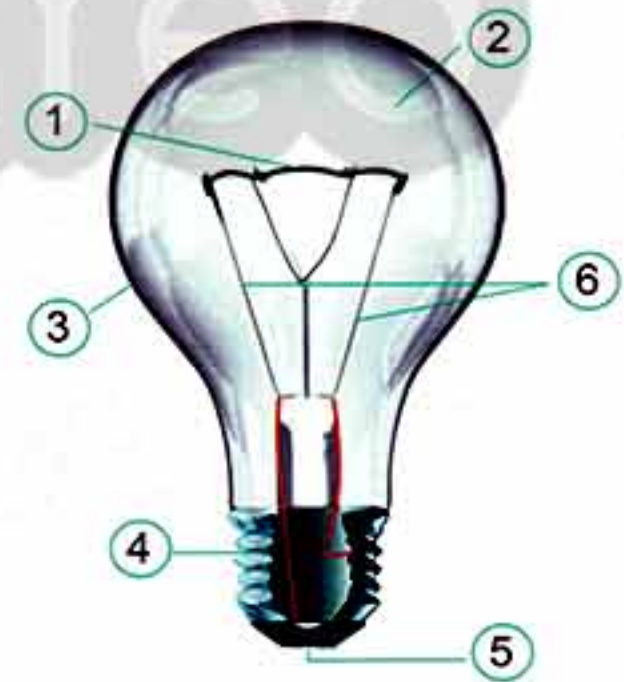
**15.** Look at the opposite figure, then answer :

- (A) What is the name of this figure ?

.....

- (B) Label the following figure : (Giza & Beheira 2017)

- ① .....  
 ② .....  
 ③ .....  
 ④ .....  
 ⑤ .....  
 ⑥ .....



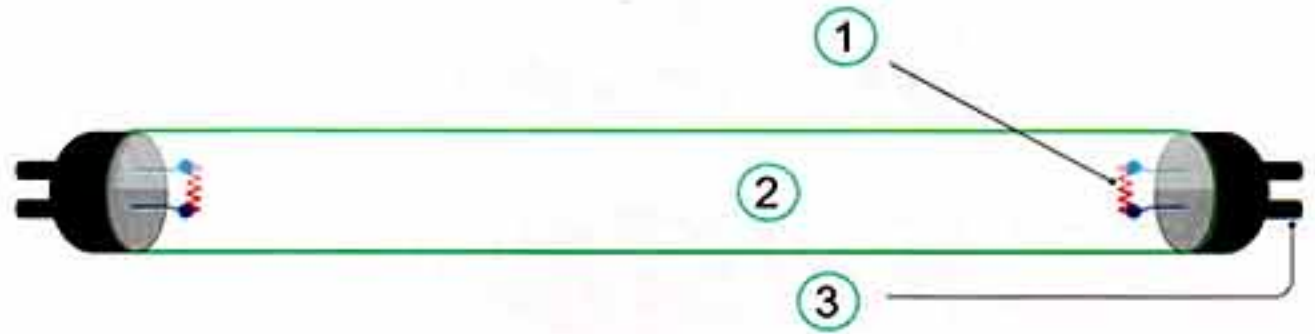
- (C) Why is the glass bulb of the electric lamp filled with argon gas ?

.....



**16** Look at the opposite figure, then label it.

- ① .....  
 ② .....  
 ③ .....



**17** Look at the figure in front of you, then answer :

- In this case, the simple circuit is ..... , so the electric current passes through.
- In case of any of these parts is not connected, the ..... does not pass through the circuit.

3. Write the labels.

- ① .....  
 ③ .....  
 ⑤ .....

- ② .....  
 ④ .....  
 ⑥ .....

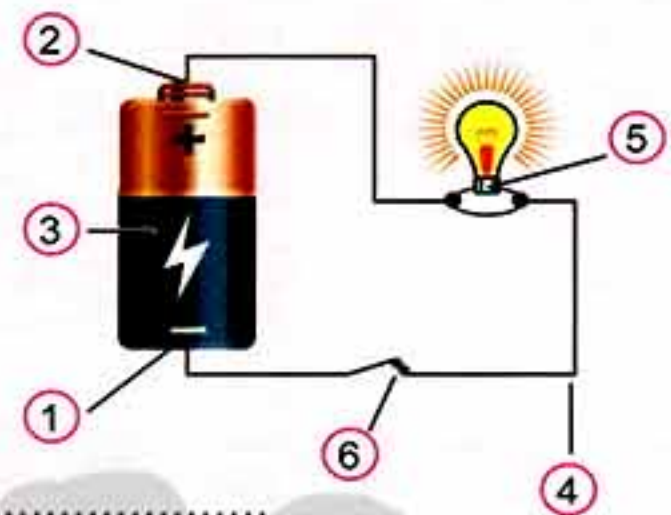
4. The part no. (6) should be ..... in order to the light bulb glows.

a. closed

b. opened

c. unimportant

(Kafr El-Sheikh 2016)



(Damietta 2016)



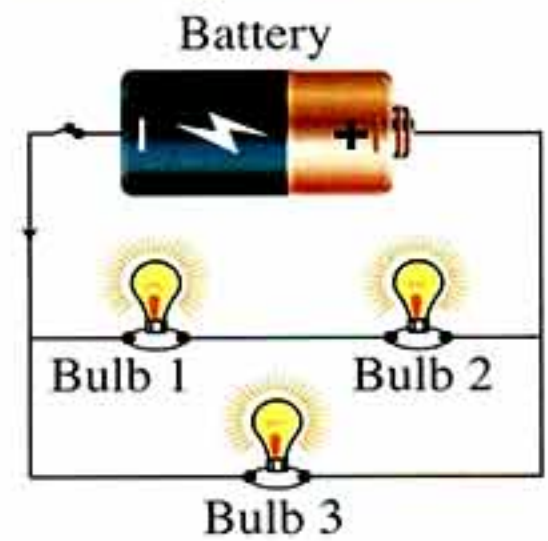
# Timss Questions



1. Three identical light bulbs are connected to a battery as shown in the diagram.

The arrow indicates the direction of the current flow.

Direction of current flow



- If the bulb no. 1 was disconnected, what happen to the remaining bulbs ?

- a. bulbs 2 , 3 still light.      b. bulb 2 only lights.  
c. bulb 3 only lights.      d. bulb 2, 3 will put off.

2. Three groups of information listed in 3 columns :

A

- Piece of lead
- Argon gas
- Glass bulb
- Tungsten filament
- Copper and lead wires

B

- Inert argon gas
- Mercury vapour
- Phosphoric material
- 2 points of connection

C

- Battery
- Switch
- Lamp
- Electric wires

Choose the correct answer :

- a. Column (A) is structure of light bulb and column (C) is structure of fluorescent lamp.  
b. Column (A) is structure of battery and column (B) is structure of fluorescent lamp.  
c. Column (B) is structure of fluorescent lamp and column (C) is structure of electric circuit.  
d. Column (A) is structure of electric circuit and column (C) is structure of light bulb.

3. In science lab. , students form an electric circuit with 4 lamps connected in series. Adel suggests to increase the number of lamps in series to obtain more light intensity than that of the 4 lamps.

Do you agree with Adel's suggestion ?

(Tick one box)

Yes

No

Explain your answer.



4. Look at the following circuits, then answer :

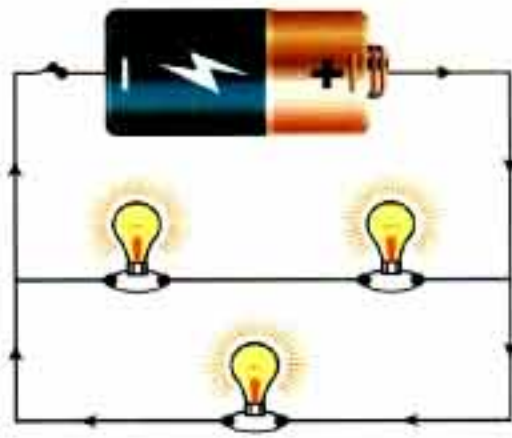


Fig. (a)

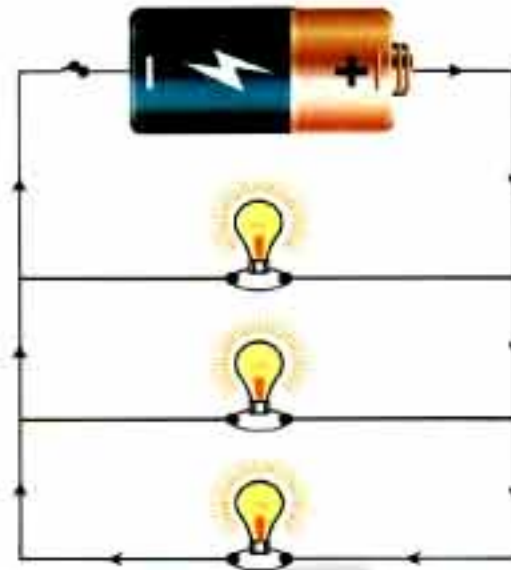


Fig. (b)

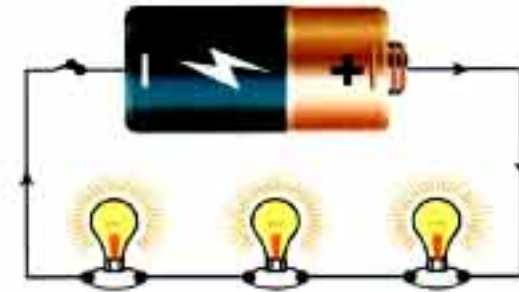


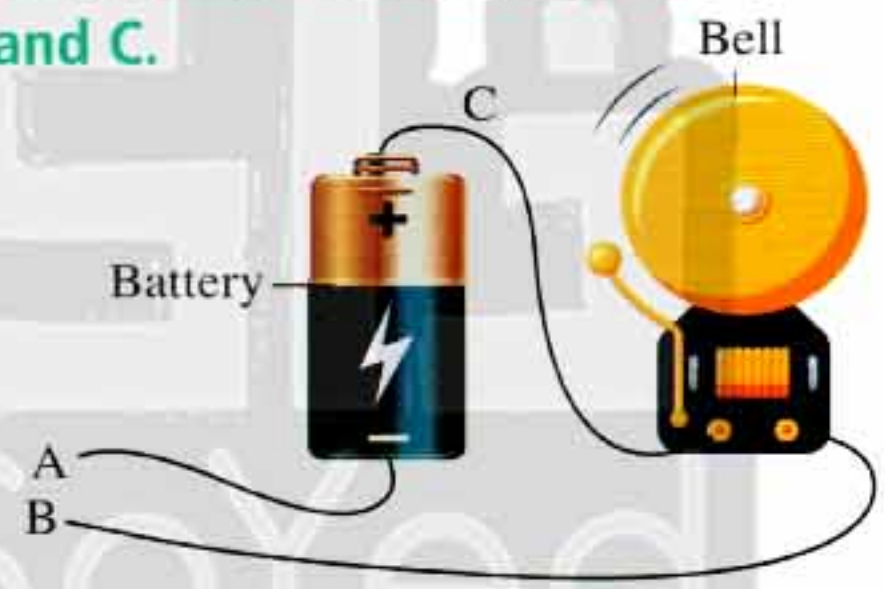
Fig. (c)

1. Name one of the above circuits that has electric lamps connected in series ? ( ..... )
2. In which circuit do the bulbs glow most brightly ? ( ..... )
3. In which circuit do the bulbs glow least brightly ? ( ..... )

5. The diagram bellow shows part of an electrical circuit that includes a battery, a bell and three wires labeled A, B and C.

The bell does not make a sound. Explain what needs to be done to the circuit so that the bell will make a sound ?

.....  
 .....  
 .....



6. Put on the figure, the letters and the name of the part that represent the answer of the following questions :

- a. It prevents air from reaching the filament to protect it from burning.
- b. It heats up and emits light when the electric current passes through.
- c. It carries the light bulb in an upright position.
- d. It protects the filament from burning when it heats up and increases its lifetime.
- e. They allow the electric current to pass from the base of the light bulb to the tungsten filament.





# Questions on lesson two



Questions signed by have been taken from the school book.

## 1. Choose the correct answer :

- In our daily life, electricity can be used in .....  
 a. cooking and preserving food.      b. lighting houses and factories.  
 c. operating some machines.      d. (a) , (b) and (c).
- ..... is a good conductor of electricity. *(El-Menofia & Aswan 2017)*  
 a. Wood      b. Iron      c. Plastic      d. Glass
- All the following materials allow the flow of the electric current except ..... *(Beheira 2017)*  
 a. iron.      b. copper.      c. rubber.      d. aluminium.
- All the following are electric insulators except .....  
 a. glass.      b. rubber.      c. wood.      d. copper.
- ..... is a bad conductor of electricity. *(Beheira 2016)*  
 a. Aluminium      b. Copper      c. Iron      d. Plastic
- Materials that don't allow the flow of electricity through them are called .....  
 a. electric conductors.      b. electric burns.  
 c. electric insulators.      d. electric fires.
- Materials that allow the flow of electricity through them are .....  
 a. electric conductors.      b. electric insulators.  
 c. electric shocks.      d. electric fires.
- Dangers of electricity include .....  
 a. electric fires.      b. electric shock.  
 c. electric burn.      d. (a) , (b) and (c).
- All the following are from the direct injuries except .....  
 a. fires resulting from electricity.      b. falling from the top of a ladder.  
 c. the electric shock.      d. electric burns.
- Increasing the temperature of the electric machines causes .....  
 a. electric shock.      b. electric burns.  
 c. electric fires.      d. (a) , (b) and (c).
- Plugging many appliances (machines) to one socket may cause .....  
 a. electric overload.      b. heating up of wires.  
 c. fires.      d. (a) , (b) and (c). *(Gharbia 2017)*



12. Water cannot be used to put out electric fires, because .....
- it is a good conductor of electricity.
  - it is a bad conductor of electricity.
  - it may evaporate.
  - it is not cold.
13. .... occurs due to passing the electric current through the human body.
- Electric shock
  - Electric fire
  - Electric burn
  - Electric overload
- (Giza 2015)
14. The harms resulting from the electric shock depend on .....
- the time taken by the current to pass through the human body.
  - the strength of the electric current passing through the human body.
  - the heavy clothes that covered the human body.
  - (a) and (b).
15. The electric shock may cause .....
- electric fires.
  - electric overload.
  - electric burns.
  - electric current.
16. Which of the following is (are) from the reasons of the electric burns ? .....
- Your body touches an electric machine that generates heat.
  - Your body touches an insulated wire.
  - Your body touches spark that results from an electric current.
  - (a) and (c).
17. To avoid the occurrence of electric shock, you should not .....
- touch the naked wires.
  - touch electric machines with wet hand.
  - put metallic objects in the electric socket.
  - (a) , (b) and (c).
18. Which of the following is from the precautions in dealing with electricity ? .....
- Place several connections in the same socket.
  - Play with the electric connections.
  - Don't clean any electric machine, while being connected to the electricity.
  - Place the flammable materials as curtains close to the machines that generate heat.



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19. The electric wires are made of .....  
 a. glass.                      b. plastic.                      c. rubber.                      d. copper.
20. Electric wires must be covered with ..... (Cairo 2017)  
 a. copper.                      b. plastic.                      c. iron.                      d. lead.






**2. Put (✓) in front of the correct statement and (✗) in front of the wrong one, then correct it :**

1. Electricity is a useful form of energy, but it is dangerous. ( )
2. Plastic is a good conductor of electricity. (Red Sea 2017) ( )
3. Iron, aluminium and copper are considered as electric conducting materials. ( )
4. Wood and plastic allow the flow of electricity through them. ( )
5. When putting a piece of plastic in an electric circuit, the electric current passes. ( )
6. Electric insulators allow the flow of the electric current through them. ( )
7. Electric fires, electric shock and electric burns are from the dangers of electricity. ( )
8. Electric shock occurs as a result of passing an electric current through the human body. (Sohag & South Sinai 2017) ( )
9. The human body is an electric insulator. ( )
10. Touching a naked wire that has an electric current causes electric fire. ( )
11. There is no danger when touching an electric machine with wet hand. ( )
12. Fires resulted from electricity are extinguished by water. (Aswan 2017) ( )
13. Electric fires occur as a result of the increase in the temperature of the electric machines. ( )
14. You must avoid placing flammable materials close to electric machines that generate heat. ( )
15. The harms of the electric shock depend only on the time taken by the electric current to pass through the body. ( )
16. Touching spark resulted from the electric fire causes electric shock. ( )
17. If the injured with an electric shock can't breathe, start artificial respiration immediately. (Sohag 2015) ( )




18. A wood bar is used to push the injured person caused by electric accidents. ( )
19. Electric fires cause damage of the body tissues. (Fayoum 2015) ( )

### 3. Write the scientific term of each of the following :








1.  Materials that allow the electric current to pass through them. (Giza & Kafr El-Sheikh 2017) ( )
2.  Materials that don't allow the electric current to pass through them. (Suez & Aswan 2017) ( )
3. A form of energy that is used in operating some machines as television and washing machines. ( )
4.  Fires occur as a result of the increase in the temperature of the electric machines. (Giza & Sharkia 2017) ( )
5. An electric danger occurs when placing flammable materials near to electric machines that generate heat. ( )
6. The material that should not be used to put out electric fires. ( )
7. The material that is used in putting out electric fires. ( )
8. A danger of electricity that happens when plugging more than one machine to one socket. ( )
9.  One of the dangers of electricity occurs as a result of the passage of the electric current through the human body. (Port Said 2017) ( )
10. A danger that occurs when a part of your body touches a wire that has an electric current, but the other part touches a material that is a good conductor of electricity. ( )
11.  One of the dangers of electricity that causes the damage of the tissues of the body. (Fayoum & Assiut 2017) ( )

### 4. Complete the following statements :



1. Electricity is used to light ..... and .....
2. Electricity is used to operate some machines such as ..... , ..... and .....
3. Materials are classified into ..... and ..... according to their conductivity of electricity.
4. Materials that allow the flow of electricity through them are called ..... (Cairo 2017)
5.  ..... and ..... are examples of materials that are electric conductors. (Sharkia 2017)




## Unit Two

6. Iron is considered as an electrical ..... , while wood is considered as an electrical .....
7. Materials that don't allow the passage of electricity through them are called .....
8.  ..... and ..... are from the examples of the electric insulators.
9. Metallic materials are considered from the electric ..... , while glass and rubber are considered from the electric ..... (Ismailia 2017)
10. There are two types of injuries resulting from the improper use of electricity which are ..... and ..... (Beheira 2017)
11.  ..... and ..... are some of the dangers of electricity.
12. .... and ..... are from the direct injuries that resulted from the improper use of electricity. (Aswan & Matrouh 2017)
13. Increasing the temperature of the electric machines may cause .....
14. Placing flammable materials near an electric heater leads to .....
15. Plugging more than one machine to one socket causes ..... that leads to .....
16.  ..... and ..... are some of the causes of the electric fires.
17. Connecting an electric iron to the electric current, then put curtains close to it causes .....
18. Impure water cannot be used to put out the fires resulting from ..... (Cairo 2016)
19. We can put out ..... fires by using water, while we can put out electric fires by using .....
20.  You cannot put out the electric fires with water, because water is .....
21. .... results from passing an electric current through the human body. (Kafr El-Sheikh 2017)
22.  The electric shock occurs as a result of passing ..... through the human body. (North Sinai 2017)
23.  The harms resulting from the electric shock depend on ..... and ..... (Dakahlia 2017)
24. .... occurs when your body is a part of a closed electric circuit.
25.  The body burns resulting from the electric current lead to .....




26.  ..... and ..... are some of the causes of the burns that resulted from electricity. (Sohag 2016)
27.  ..... and ..... are from the precautions to deal with electricity.
28. We should not touch any electric machine with ..... hand.
29. We should not touch the ..... parts of the electric wires.
30. We should place a piece of ..... in the electric socket.
31. We should not place the flammable materials such as furniture and ..... close to electric machines that generate ..... such as ..... and electric iron.
32. Electric cables (wires) are covered with ..... materials.

### 5. Give reasons for the following :



- Electric energy is very necessary in our daily life.  
.....  
.....
- If we insert an iron nail in a simple electric circuit, the electric current will pass through it.  
.....  
.....
- If we insert a piece of wood in a simple electric circuit, the electric current will not pass through it.  
.....  
.....
- Aluminium is an electric conductor.  
.....  
.....
- Plastic is considered as an electric insulator.  
.....  
.....
-  Not placing flammable materials close to the electric machines that generate heat.  
.....  
.....
- Plugging more than one machine to one socket causes electric fires. (Gharbia 2016)  
.....  
.....
- We must disconnect the electric current from electric machines that generate heat after use.  
.....  
.....
- Water is not used to put out electric fires. (Beheira & Dakahlia 2017)  
.....  
.....



## Unit Two

10.  Not placing metal things inside the socket.  
.....
11. Placing a piece of plastic in the socket.  
.....
12. Pushing the injured by anything that is non-conducting of electricity such as a piece of wood.  
.....  
.....  
(Red Sea 2016)
13. The electric heater must not be placed close to furniture or rugs.  
.....  
(Cairo & Qena 2016)
14. We must not touch any electric machine with a wet hand.  
.....
15. Avoid fixing and cleaning any electric machine, while it is connected to the electric source.  
.....
16. The electric cables are covered with insulated materials.  
.....  
(Ismailia 2016)
17. Electric wires are made of copper.  
.....

## 6. Correct the underlined words :




1.  Wood is considered a good conductor of electricity. (.....)
2. Copper and iron are electric insulators. (.....)
3.  The electric fire occurs due to the passage of the electric current through the human body. (Assiut & Matrouh 2017) (.....)
4. Touching the naked wires that has an electric current leads to electric fire.  
(.....)
5. Electric insulators are materials that allow the flow of electric current through them. (.....)
6. Electric conductors make the circuit open when they are connected to the circuit. (.....)
7. Fires resulted from electricity are extinguished by water. (.....)

(Sharkia 2017)




8. The human body is a good conductor of electricity as it contains **gases**.  
(Alex. & Beheira 2017) ( ..... )
9. Impure water is one of the liquid materials that is **bad** conductor of electricity.  
(Menofia 2016) ( ..... )
10. Pushing the injured by anything that is non-conducting of electricity such as a piece of **copper**.  
(Beheira 2016) ( ..... )
11. **Insulators** cause the damage of the tissues of the human body.  
( ..... )
12. Plugging more than one machine to one socket causes **electric burns**.  
( ..... )
13. Touching the spark that resulted from electric fires causes **electric shock**.  
( ..... )


### 7. What happens if ... ?

1. A piece of copper is inserted in a closed simple electric circuit.  
.....
2. A piece of glass is inserted in a closed simple electric circuit.  
.....
3.  You place the electric heater close to furniture or rugs.  
(El-Minia 2017)  
.....
4. Plugging several electric machines in the same electric socket.  
.....
5. A man touches uncovered wire that has an electric current. (Sharkia 2017)  
.....
6.  You insert a metallic bar in an electric socket.  
.....
7. You touch a plugged electric machine with a wet hand.  
.....
8. You try to fix or clean an electric machine, while it is switched on.  
.....
9.  The electric fires are put out by water.  
(Beheira 2016)  
.....



## Unit Two


10.  Touching a naked wire, while touching the ground. (Qena 2016)

11.  The spark resulting from the electric fires touches any part of your body. (Dakahlia 2016)

12. A part of your body touches an electric iron connected to electricity.

13. The electric wires are left uncovered and non insulated.

14. Electricity is not handled cautiously.

8.  Compare between the conducting materials of electricity and the non-conducting materials.

9. What is meant by ...?

1. Electric conductors.

2. Electric insulators.

3. Electric fires.

4. Electric shock. (Kalyoubia 2017)

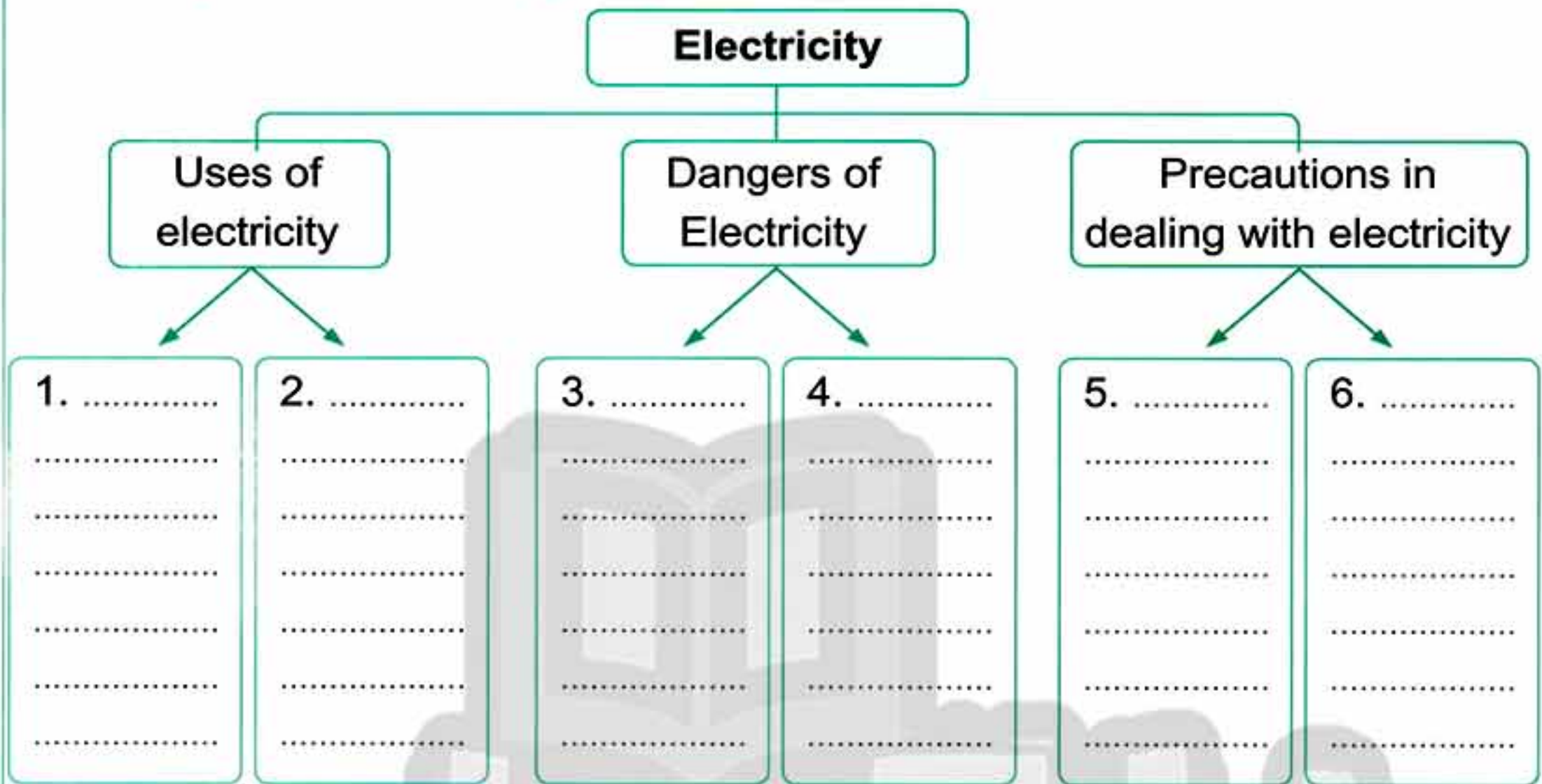
5. Electric burns.

10. Mention some of the important precautions when dealing with electricity.

(Cairo 2015)



11. Complete the following diagram :



12. State the reasons for the fires resulting from the electricity.

.....

.....

.....



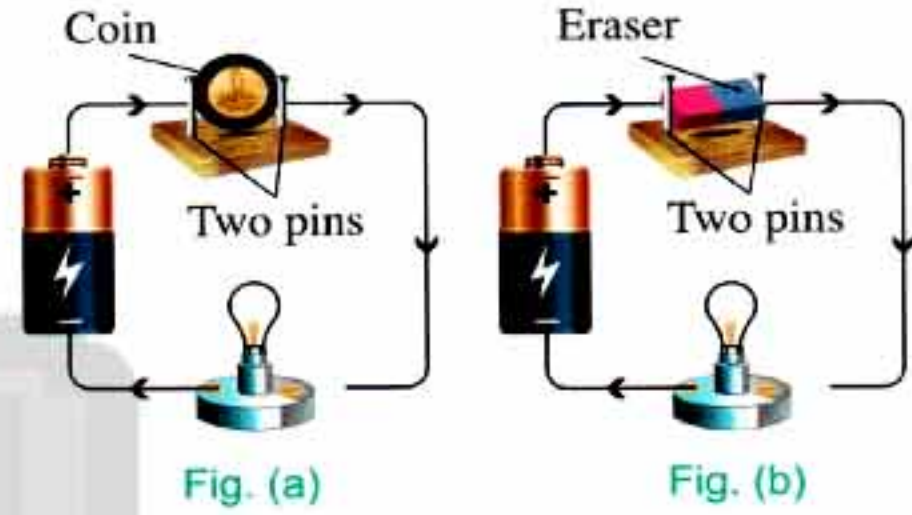
# Timss Questions



## 1. Look at the opposite figures, then answer :

A. Which circuit becomes open when the wire is connected to the light bulb? Why ?

.....  
 .....



B. Which circuit becomes closed when the wire is connected to the light bulb? Why ?

.....  
 .....

## 2. Circle the mistakes in the following article and correct them.

- Human body is a good conductor of electricity, because 50% of the body contains water vapour, so the electric burn happens when your body is a part of open electric circuit. In many cases electric shock causes vomiting.

3. Person (A) is subjected to an electric shock with 30 Ampere (Ampere is the unit of strength of the electric current) in 10 seconds , while person (B) is subjected to another electric shock with 60 Ampere in 15 seconds.

Which person may die ?

.....

4. a. Call the physician immediately  
 b. Open up the tight clothes of the injured  
 c. Start artificial respiration immediately if the injured cannot breath.

Put one suitable title for all the previous sentences.

.....



## Unit Two

## Lesson 1

## Worksheet

## 3

Answer each of the following questions :

1. Write the scientific term :

(5 marks)

1. A type of lamp bases that has two side nails and two pieces of lead to connect the lamp with the electric circuit. ( ..... )
2. A type of electric lamps that has two filaments of tungsten and two points of connection. ( ..... )
3. A material that is used to cover the inner surface of the glass tube of fluorescent lamp. ( ..... )
4. A part of the lamp that heats and emits light when electric current passes through it. ( ..... )
5. They convert the electric energy into light energy. ( ..... )

2. [A] Correct the underlined words in the following sentences :

(5 marks)

1. Electric lamps contain hydrogen inert gas. ( ..... )
2. The filament of the light bulb is made of copper. ( ..... )
3. The light bulbs are the most popular source of natural light. ( ..... )

[B] What happens if ... ?

1. The filament of the lamp is made of iron.

.....  
.....

2. There is air inside the glass bulb.

.....  
.....

3. Complete the following sentences :

(5 marks)

1. .... is the most popular source of artificial light and it is used in car lights, while .... is used in decorating the commercial stores.
2. .... is a coiled thin wire that made of tungsten.



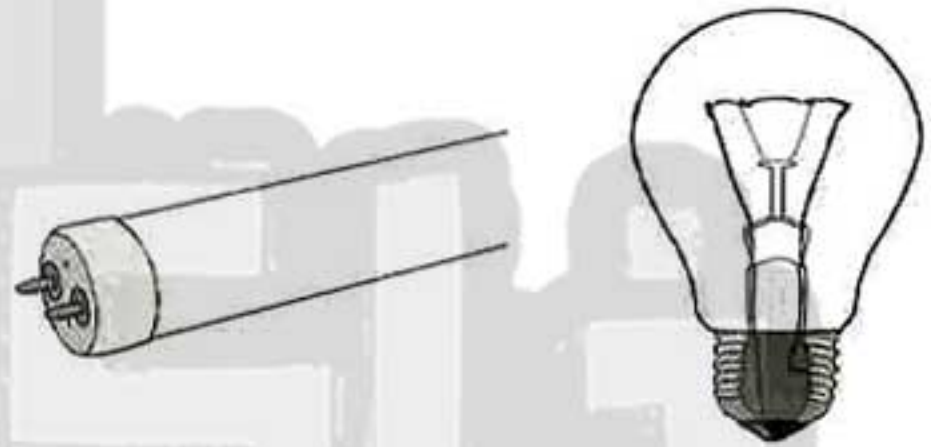
## Worksheets

3. .... consists of a filament, glass bulb and the base of the light bulb, while .... consists of a glass tube, two filaments of tungsten and points of connection.
4. .... is an inert gas that increases the lifetime of the filament.
5. .... has a piece of lead, while the .... has two side nails and two pieces of lead.
6. .... allow the electric current to transfer from the base of the lamp to the tungsten filament.
7. The filament of the lamp is made of .... as it has high melting point.

**4. Put the following labels on the following figures :**

(5 marks)

Tungsten filament – Points of connection – Copper and lead wires – Base of the light bulb – Glass bulb – A piece of lead – Glass tube.



**5. [A] Give reasons for :**

(5 marks)

1. Copper and lead wires are very important in the light bulb.

.....

.....

2. The glass bulb of the light bulb contains argon gas.

.....

.....

3. Filaments of electric lamps are made of tungsten.

.....

**[B] Mention the function of each of the following :**

1. The points of connection in the fluorescent lamp :

.....

.....

2. The filament :

.....

.....



## Unit Two

## Lesson 1

Total mark  
25

## Worksheet 4

Answer each of the following questions :

## 1. Choose the correct answer :

(5 marks)

- The ..... is the continuous path through which the electric current passes.
  - open electric circuit
  - battery
  - closed electric circuit
  - lamp
- ..... works as a source of electric current in the electric circuit.
  - Lamp
  - Electric wire
  - Battery
  - Key
- The light bulbs are connected in ..... in the house.
  - parallel
  - series
  - parallel and series
  - series in some places and in parallel in the other places.
- In series connection, the light intensity of the light bulbs .....
  - decreases by increasing the number of the light bulbs.
  - increases by decreasing the number of the light bulbs.
  - increases by increasing the number of the light bulbs.
  - (a) or (b).
- By unscrewing one bulb from bulbs connected in parallel, .....
  - the electric current doesn't flow.
  - the electric current flows.
  - light intensity of the other bulbs is still constant.
  - (b) and (c).

## 2. Write the scientific term :

(5 marks)

- A way of connection, in which the light bulbs are connected one after another. (.....)
- A part of the electric circuit used to connect the battery to the lamp in the electric circuit. (.....)
- A way of connection, in which the light bulbs are connected in branching routes. (.....)

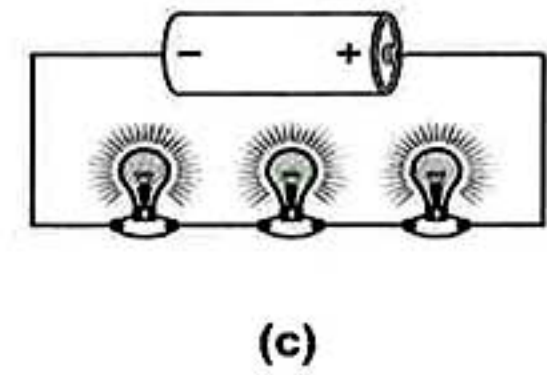
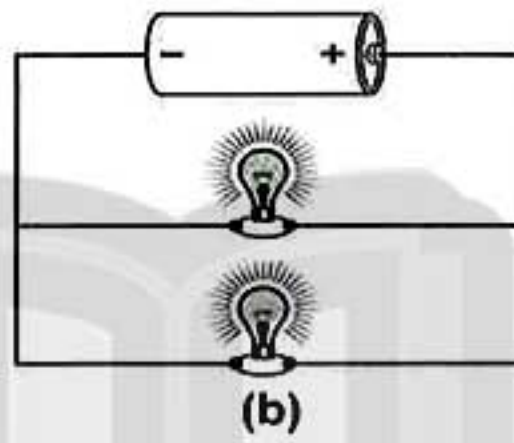
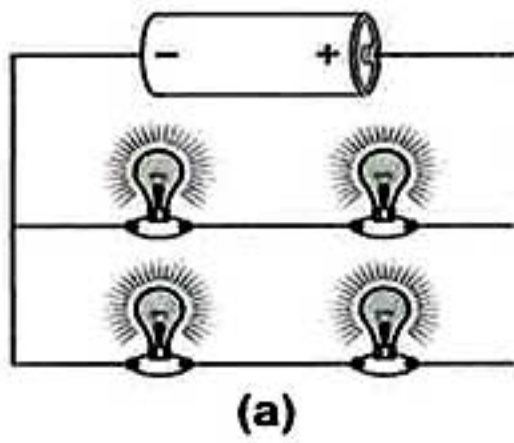


## Worksheets

4. A way of connection, in which the light intensity remains constant by increasing or decreasing the number of lamps. ( ..... )
5. The way of connecting machines and all lamps in the house. ( ..... )

### 3. Look at the following circuits, then answer :

(5 marks)



1. Name one of the above circuits that has electric lamps connected in series? .....
2. In which circuit do the bulbs glow most brightly ? .....
3. In which circuit do the bulbs glow least brightly ? .....

### 4. Complete the following sentences :

(5 marks)

1. The electric circuit consists of ..... , ..... and .....
2. .... and ..... are methods to connect the electric lamps in the electric circuits.
3. In ..... connection, there is no branches, but in ..... connection, the light bulbs are connected in branching routs.
4. In parallel connection, the light intensity of the light bulbs ..... by increasing or decreasing the number of the light bulbs.
5. In series connection, the light intensity of the light bulbs ..... by increasing the number of the light bulbs.

### 5. [A] Give reasons for :

(5 marks)

1. Damage any of the lamps in a room doesn't affect the lamps in the other rooms of the house.

.....

.....

.....



2. On unscrewing one bulb from an electric circuit contains electric bulbs connected in series, the electric current doesn't flow.

.....

.....

.....

3. When unscrewing one bulb from an electric circuit contains electric bulbs connected in parallel, the electric current flows.

.....

.....

**[B] Explain by drawing only how can you connect two light bulbs :**

1. In series



2. In parallel





## Unit Two

## Lesson 2

Total mark  
25

## Worksheet 5

Answer each of the following questions :

## 1. Choose the correct answer :

(5 marks)

- Which of the following is from the indirect injuries ? .....
  - Fires resulting from electricity.
  - Falling from the top of a ladder.
  - The electric shock.
  - Burns resulting from the electric current.
- All the following materials are electric conductors except .....
  - iron.
  - copper.
  - aluminium.
  - wood.
- Fires caused by electricity are put out by .....
  - water.
  - sand.
  - air.
  - (a) and (b).
- Which of the following is (are) from the benefits of electricity ? .....
  - Cooking food.
  - Lighting houses and streets.
  - Operating some machines as televisions and washing machines.
  - (a) , (b) and (c).
- ..... occur as a result of the increase in the temperature of the electric machines.
  - The electric shocks
  - Burns resulting from the electric current
  - Fires resulting from electricity
  - Indirect injuries

## 2. Write the scientific term :

(5 marks)

- Materials that make the electric circuit open when they are connected with it. ( ..... )
- A danger results from plugging more than one machine to one socket that causes electric overload. ( ..... )
- A danger that results from not disconnecting the electric current from the electric machine that generates heat after use. ( ..... )
- Materials that allow the flow of electricity through them. ( ..... )
- The material that should not be used to put out electric fires. ( ..... )



3. [A] Compare between the regular fires and fires caused by electricity : (5 marks)

.....

.....

.....

.....

[B] Give reasons for :

1. Electricity is very important in our life.

.....

.....

2. Plugging more than one machine to one socket causes electric fires.

.....

.....

3. Copper is a good conductor of electricity.

.....

.....

4. [A] Complete the following statements : (5 marks)

1. .... and .... are dangers resulted from the improper use of electricity.

2. Iron is from ...., while .... is from electric insulators.

[B] Compare between the electric conductors and electric insulators.

.....

.....

.....

.....

.....

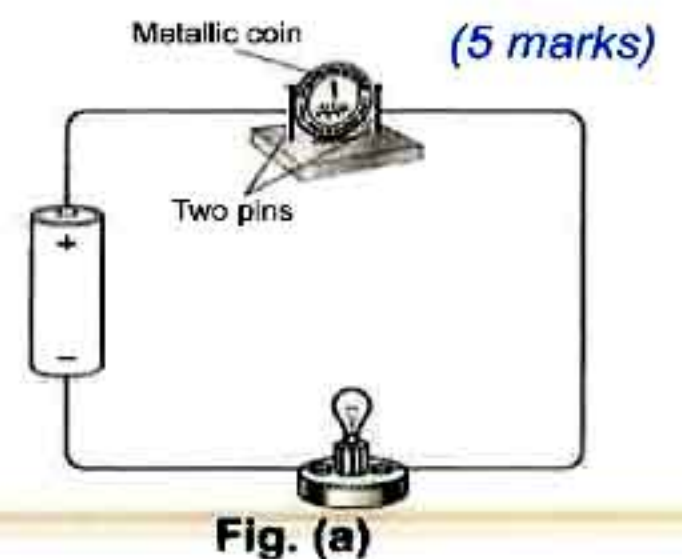
5. Look at the opposite figures, then answer :

1. In which figure the light bulb will light up when the electric wires connected to the bulb ? Why ?

.....

.....

.....





## Worksheets

2. In which figure the light bulb will not light up when the electric wires connected to the bulb ? Why ?

.....

.....

.....

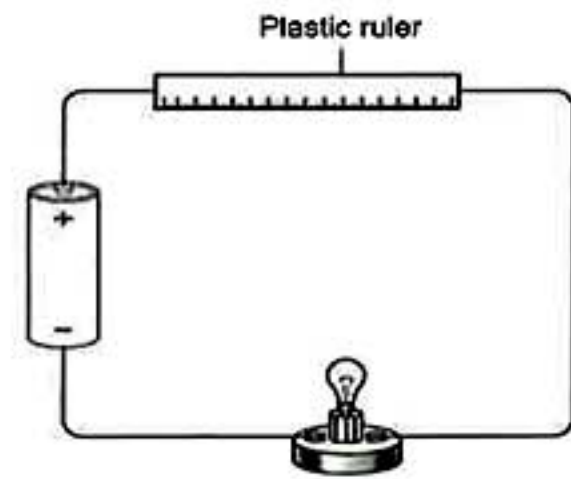


Fig. (b)

3. What do you conclude from the two figures ?

.....

.....

.....

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## Unit Two

## Lesson 2

Total mark  
25

## Worksheet 6

Answer each of the following questions :

1. Put (✓) or (x) in front of each behaviour in the following table : (5 marks)

The behaviour	(✓) or (x)
1. Leaving an electric machine connected with the electric current while taking a bath.	
2. Leaving wires naked and not insulated.	
3. Don't clean or fix an electric machine while it is connected to the electric current.	
4. Place several connections in the same socket.	
5. Placing a piece of plastic in the socket.	

2. [A] Correct the underlined words in the following sentences : (5 marks)

- The electric shock happens when plugging more than one machine to one socket. (.....)
- Water is not used in putting out electric fires because it is a bad conductor of electricity. (.....)
- Thermal glass is among electric conductor substance. (.....)

[B] Mention the type and the reason of this injury :

.....

.....

.....

.....



3. Write the scientific term : (5 marks)

- They are burns that result from electricity and cause the damage of the body tissues. (.....)
- A danger that results when a part of your body touches a wire that has an electric current and the other part touches the ground. (.....)



## Worksheets

3. A direct injury results when a part of your body touches spark resulting from the electric fires. ( ..... )
4. A danger that results when a part of your body touches a wire that has an electric current, but the other part touches a material conducting electricity. ( ..... )
5. An injury results when a part of your body touches a device that generates heat. ( ..... )

**4. Choose the correct answer :**

(5 marks)

1. All the following are from the precautions in dealing with electricity except .....
  - a. don't place flammable materials close to the electric machines that generate heat.
  - b. place a piece of plastic in the socket.
  - c. don't insert a nail in the socket.
  - d. play with the electric connections.
2. The electric burns happen when .....
  - a. a part of your body touches a source of electric current directly.
  - b. a part of your body touches a spark resulting from an electric fire.
  - c. a part of your body touches a wire that has an electric current and the other part touches the ground.
  - d. (a) and (b).
3. All the following reasons are from the reasons of the electric fires except .....
  - a. placing an electric machine that generates heat close to curtains.
  - b. plugging more than one machine in the same socket.
  - c. passing the electric current through the human body.
  - d. not disconnecting the electric current from the electric machine that generates heat.
4. .... results when your body is a part of an electric circuit.
  - a. Electric fire
  - b. Electric conductor
  - c. Electric burn
  - d. Electric shock
5. Burns that result from electricity and cause the damage of the body tissues are .....
  - a. electric fires.
  - b. electric shock.
  - c. electric burns.
  - d. indirect injuries.



5. [A] Mention three precautions in dealing with electricity.

(5 marks)

.....

.....

.....

.....

[B] Give reasons for :

1. Placing a piece of plastic in the socket.

.....

.....

2. We must not touch any electric machines with wet hands.

.....

.....

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Ra Nia SaYed



## General Exercise of the School Book on

## 1. Complete the following sentences :

1. .... and .... are two ways for connecting electricity.
2. .... and .... are some precautions should be taken while dealing with the electricity.
3. The simple electric circuit consists of .... , .... and ....
4. .... , .... and .... are examples of the electric insulating materials.
5. In the case of connecting the lamps in .... , the lighting of the lamps decreases with their increase in number.

## 2. Correct the underlined words :

1. The electric lamp converts the electric energy to the kinetic energy. ( ..... )
2. The filament of the light bulb is made of carbon. ( ..... )
3. While connecting the lamps in parallel the lamps are connected one after the other. ( ..... )
4. There are two connecting points at each end of the light bulb. ( ..... )
5. The electric fire occurs due to the passage of the electric current through the human body. ( ..... )
6. The electric lamps are connected in the house in series. ( ..... )
7. When the lamps in the electric circuit are connected in series , they continue to work if a lamp is damaged. ( ..... )
8. The glass bulb of the electric lamp contains hydrogen gas. ( ..... )
9. Wood is considered a good conductor of electricity. ( ..... )

## 3. Write the scientific explanation to each of the following :

1. The swelling (glass bulb) of the electric lamp contains an inert gas instead of air.  
.....
2. Not placing metallic things inside the socket.  
.....
3. There are connecting points at the ends of the fluorescent lamps.  
.....
4. Not placing flammable materials too close to the electric machines that generate heat.  
.....



**4. Compare between each of the following :**

1. Connecting electric lamps in series and connecting in parallel.

.....

.....

.....

2. The light bulb and the fluorescent lamp in respect to structure.

.....

.....

.....

3. The conducting materials of electricity and the non-conducting materials.

.....

.....

.....

**5. Write the scientific term of each of the following :**

1. Materials that allow the electric current to pass through it. ( .....

2. Fires occur due to the increase in the temperature of the electric wires.

( .....

3. Materials that don't allow the electric current to pass through it. ( .....

4. The way that electric lamps are connected one after another, and the intensity of the light of the lamps decreases with the increase in their number.

( .....

5. A tool used to convert the electric energy to light energy. ( .....

6. The way that the lamps are connected through branching routes and light of the lamps are not affected with the increase in their number. ( .....

7. One of the dangers of the electricity occurs due to the passage of the electric current through the human body. ( .....

8. One of the dangers of the electricity is that it destroys the tissue of the body.

( .....

**6. Write your own paragraph on each of the following :**

1. The electric shock.

.....

.....

2. The electric fires.

.....

.....

3. The electric lamp.

.....

.....

4. The precautions that should be taken to deal with the electricity.

.....

.....

.....



## Model Exam

1

## on Unit Two

Total mark  
25

Answer each of the following questions :

## 1. Complete the following statements :

(5 marks)

1. The fluorescent lamps contain ..... gas and a little of .....
2. Rubber is considered from the electric ..... , while copper is considered from the electric .....
3. When connecting more than one bulb with the circuit in series, the light intensity .....
4. In houses, the electric lamps are connected in .....
5. The electric shock occurs as a result of passing ..... through the human body, in many cases it causes .....
6. The ..... electric circuit consists of battery, lamp and .....

## 2. [A] Give reasons for :

(5 marks)

1. There is a glass bulb around the filament.  
.....
2. We shouldn't touch uncovered electric wires.  
.....

## [B] Write the scientific term :

1. They allow the electric current to pass from the base of the light bulb to the tungsten filament. ( ..... )
2. The material that should be used to put out electric fires. ( ..... )
3. A type of lamps their inner surface is covered with phosphoric material. ( ..... )

## 3. Choose the correct answer :

(5 marks)

1. The electric shock may cause .....  
a. electric current.   b. electric burns.   c. electric fires.   d. electric overload.
2. If we have four light bulbs and we need to get high light intensity, so we must connect them .....  
a. in series.   b. in parallel.   c. (a) and (b).   d. no correct answer.
3. If we connect an eraser with an electric circuit, the .....  
a. electric circuit will be opened.   b. electric circuit will be closed.  
c. electric current will flow.   d. (b) and (c).



4. Which of the following gases is found in the fluorescent lamp but not in the light bulb ? .....
- a. Argon.                      b. Water vapour.                      c. Neon.                      d. Mercury vapour.
5. Electric wires must be covered with .....
- a. copper.                      b. iron.                      c. lead.                      d. plastic.

**4. [A] Correct the underlined words :**

(5 marks)

- The electric lamp contains active gas to increase the lifetime of the filament. ( ..... )
- The inventor of the electric light bulb is the scientist Archimedes. ( ..... )
- The human body is a good conductor of electricity as it contains gases. ( ..... )

**[B] What happens when ... ?**

- One of the light bulbs is broken, while it is connected in series with the others.  
.....
- You insert a metallic bar in an electric socket.  
.....

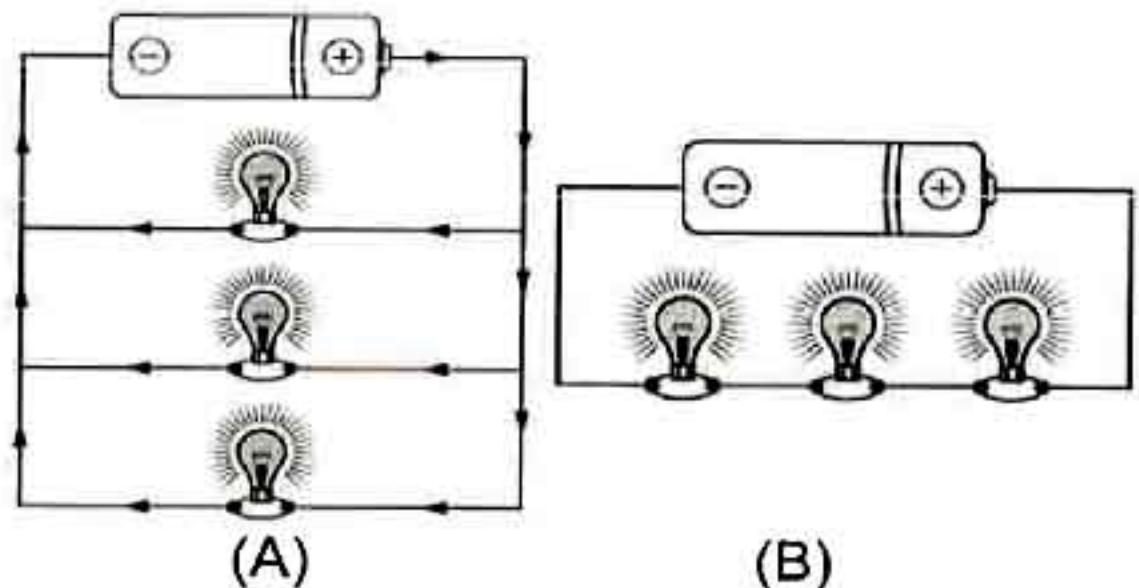
**5. [A] Put (✓) or (x) :**

(5 marks)

- The fluorescent lamp is known as neon lamp because it contains the inert neon gas. ( )
- We can use a piece of wood to push the injured person during electric accidents. ( )
- The spiral base has two side nails and two pieces of lead. ( )

**[B] Notice the two following figures then answer the questions :**

- Complete :** Figure (A) represents the way to connect the electric lamps in ....., while figure (B) represents their connection in .....



- Choose :** The lighting of the bulbs in figure (B) is .....  
(more than - less than - equal to) the lighting of the same bulbs in figure (A).
- What happens if :** An electric lamp in figure (B) burns ?  
.....



## Model Exam

2

## on Unit Two

Total mark  
25

Answer each of the following questions :

## 1. Choose the correct answer :

(5 marks)

- The inert gas that exists inside the light bulb is used to .....  
 a. decrease the amount of electricity.      b. decrease the lifetime of the filament.  
 c. increase the amount of electricity.      d. increase the lifetime of the filament.
- Water is not used in putting out fires caused by electricity, because .....  
 a. it is a bad conductor of electricity.      b. it is a good conductor of electricity.  
 c. it may evaporate.      d. no correct answer.
- All the following materials allow the flow of the electric current except .....  
 a. iron.      b. aluminium.      c. rubber.      d. copper.
- Tungsten is preferred to be used in the light bulb because it has .....  
 a. bad conductivity.      b. high melting point.  
 c. low density.      d. low melting point.
- Plugging many appliances to one socket may cause .....  
 a. heating up of wires.      b. electric overload.  
 c. fires.      d. (a) , (b) and (c).

## 2. [A] Write the scientific term :

(5 marks)

- A danger of electricity that happens when plugging more than one machine to one socket. (.....)
- Materials that don't allow electricity to flow through. (.....)
- It carries the lamp in upright position and connects the lamp to electricity. (.....)

## [B] What happens when ... ?

- The filament of the light bulb is made of iron.  
.....
- The electric fires are put out by water.  
.....

## 3. Complete the following statements :

(5 marks)

- Among the safety precautions when dealing with electricity are ..... and .....
- The electric current has only one path when the light bulbs are connected in .....



3. The damage caused by electricity and lead to destroy the tissues of the body is called .....
4. There are two types of lamp bases which are ..... base and ..... base.
5. We should not place the flammable materials such as furniture and ..... close to electric machines that generate ..... such as ..... and electric iron.
6. Electric lamps emit light when ..... passes through them.

#### 4. [A] Give reasons for :

(5 marks)

1. The light bulbs are connected in parallel in the house.

2. There are two points of connection at each tip of the fluorescent lamp.

#### [B] What is meant by ... ?

1. Electric circuit.

2. Electric fires.

3. Parallel connection.

#### 5. [A] Compare between each one of the following :

(5 marks)

Points of comparison	Connecting in series	Connecting in parallel
1. Light intensity of the lamps :	..... .....	..... .....
2. Removing one of the lamps from the connection :	..... .....	..... .....

#### [B] Correct the underlined words :

1. The inner surface of the tube of the fluorescent lamp is covered with a carbonic material. (.....)
2. The glass bulb of the light lamp contains hydrogen gas. (.....)
3. When we put a piece of plastic in an electric circuit, the electric current passes. (.....)



GEM

Exercises on Lesson

1

Answer Guide P. 7

## 1 Choose the correct answer:

- The electric lamp is used to change electric energy into ..... energy. (Qalubia 2014)  
a. sound                      b. light                      c. potential                      d. kinetic
- The main idea of the electric lamp depends on .....  
a. the heat and glow of the filament  
b. the heat and brightness of argon  
c. the passing of the electric current in sodium vapor  
d. the passing of the electric current in mercury vapor
- 🇪🇬 The filament of light bulbs is made of ..... (Giza 2019)  
a. iron                      b. copper                      c. sodium                      d. tungsten
- The function of the inert gas that exists inside the light bulb is to .....  
a. increase the mount of electricity                      b. decrease the lifetime of the filament  
c. increase the lifetime of the filament                      d. no correct answers
- ..... is used to prevent air from reaching the filament.  
a. The base of the lamp                      b. Tungsten  
c. The glass bulb                      d. No correct answers
- The main idea of the fluorescent lamp depends on the emission of a bright light as a result of passing electric current through a .....  
a. solid substance                      b. liquid substance  
c. gas or a vapor                      d. no correct answers
- Tungsten is preferred to be used in electric lamps because it ..... (Dakahlia 2018)  
a. is a bad conductor of heat                      b. has a low melting point  
c. has a high melting point                      d. no correct answers
- The inner surface of the fluorescent lamp is covered with ..... (Cairo 2018)  
a. mercury                      b. phosphoric material  
c. copper                      d. tungsten
- All of the following components are not found in the glowing lamp except .....  
a. carbon dioxide                      b. mercury gas  
c. argon gas                      d. oxygen gas
- The glass tube of the fluorescent lamp contains ..... (Cairo 2019)  
a. neon gas                      b. argon gas  
c. argon and a little amount of mercury vapor  
d. (a) and (b)



11. You should not play with fluorescent lamps due to the presence of a poisonous vapor inside, which is ..... vapor.  
a. water                      b. sodium                      c. mercury                      d. (a) and (b)
12. Which of the following is found in the fluorescent lamp and is not found in the electric bulb? - .....  
(Giza 2019)  
a. Neon                      b. Argon                      c. Mercury                      d. Water vapor
13. By increasing the number of lamps connected in series, the intensity of these lamps .....  
(Beheira 2019)  
a. increases                      b. decreases  
c. no correct answers                      d. is not affected
14. In series connection, the electric current will have .....  
(Giza 2018)  
a. one path                      b. two paths                      c. several paths                      d. no correct answers
15. When an electric lamp connected in series with other lamps is broken or burnt, the other lamps .....  
(Gharbia 2016)  
a. increase in light intensity                      b. turn off  
c. decrease in light intensity                      d. remain as they are
16. When a lamp is connected in parallel with several lamps, the intensity of the lamps .....  
(South Sinai 2019)  
a. decreases                      b. increases  
c. remains as it is                      d. all the previous answers
17. When lamps are connected in parallel, the electric current will have .....  
a. one route                      b. two routes                      c. branched paths                      d. no correct answers
18. If a number of lamps are connected in parallel, and one of them is broken or removed, then .....  
a. the light intensity of other lamps decreases  
b. the light intensity of other lamps increases  
c. the light intensity of other lamps disappears  
d. the light intensity of other lamps remains as it is
19. The lamps at home are connected .....  
(Minia 2014)  
a. in series                      b. in parallel                      c. both (a) and (b)                      d. perpendicularly
20. The electric wires are made of .....  
(Cairo 2019)  
a. plastic                      b. wood                      c. copper                      d. sulphur
21. In which of the following circuits, the lamps will turn on? - .....





## Lesson 1





## 2 Complete the following sentences:

- ..... is used to convert the electric energy into light energy.
- 🏠 The scientist ..... invented the light bulb. (Luxor 2014)
- The light bulb is a ..... source of light energy.
- The electric current in the ..... connection has only one route. (Gharbia 2018)
- In the home, ..... connection of lamps is better than ..... connection. (Qalubia 2018)
- The glass bulb of the electric lamp protects the filament against burning by preventing ..... from reaching the filament.
- The filament of the bulb is made of ..... and that is because it has a high ..... (Damietta 2019)
- The tube of the fluorescent lamp is empty of ..... and contains inert gas such as ..... (Alex. 2018)
- In the light bulb, copper wires allow the electric current to pass from ..... to .....
- There are two types of lamp bases which are ..... base and ..... base. (Alex. 2019)
- The fluorescent lamp consists of ..... and .....
- The fluorescent lamps contain inert argon gas and a little amount of ..... (Giza 2019)
- The inner surface of the fluorescent lamp is covered with ..... material. (Fayoum 2019)
- ..... is used to prevent the tungsten filament from burning.
- Most lamps contain a kind of inert gas such as ..... gas instead of air.
- 🏠 The simple electric circuit consists of ..... and ..... (South Sinai 2019)
- 🏠 ..... and ..... are two ways for connecting electricity. (Sohag 2019)
- 🏠 All light bulbs are connected in ..... in houses. (Giza 2019)
- When connecting many light bulbs in series, light intensity .....
- 🏠 When lamps are connected in ....., their light intensity decreases by ..... in their numbers. (Beheira 2019)
- The electric current has only one path when the electric lamps are connected in ..... (Dakahlia 2019)




## 3 Put (✓) in front of the correct statement and (X) in front of the incorrect one and then correct it:

- Electric iron converts the electric energy into light energy. ( )
- All gaseous lamps contain neon gas. ( )
- Electric bulbs are one of the most popular sources of natural light. ( )
- The filament of the electric bulb is made of aluminum. (Qalubia 2014) ( )



5. The fluorescent lamp contains inert argon gas and a little amount of mercury. (Cairo 2017) ( )
6.  The glass bulb contains atmospheric air. ( )
7.  The glass bulb of the light bulb contains oxygen gas. (Sohag 2014) ( )
8. The glass bulb is used to prevent the air from reaching the filament, and this protects it from burning. ( )
9.  The spiral base of the light bulb glows up due to the passing of the electric current through it. (Assuit 2019) ( )
10. When disconnecting a lamp from a circuit connected in series, the other lamps keep working. (Sohag 2019) ( )
11. Fluorescent lamps are called neon lamps because they contain an inert gas called neon. (Luxor 2016) ( )
12. By removing a lamp from a circuit connected in parallel, the other lamps keep working. ( )
13. Lamps in houses are connected in series. (Cairo 2017) ( )
14. If one of the lamps or electric devices at home is not working, the rest of lamps and devices keep working. ( )
15. The light intensity increases in the case of series connection. ( )
16. The light intensity decreases in the case of parallel connection. ( )
17. The components of the electric circuit are battery and electric lamp only. ( )
18. The main source of electric current in the electric circuit is the battery. ( )
19. The electric circuit is an open path through which the electric current passes. ( )
20.  Electric lamps are connected in parallel in houses. (Fayoum 2012) ( )

#### 4 Write the scientific term for each of the following:




1.  A device (means) used to convert electric energy into light energy. (Giza 2019) (.....)
2.  The scientist who invented the light bulb. (Cairo 2013) (.....)
3. They connect the electricity from the base to the filament.
4. The inert gas that prevents the tungsten filament in light bulbs from burning. (.....)
5. Lamps are called neon lamps. (Cairo 2018) (.....)
6. An inert gas found in the glass bulb of the electric lamp. (Gharbia 2014) (.....)
7.  It is a coiled thin wire made of tungsten in the light bulb. (South Sinai 2019) (.....)









## Lesson 1

8. An inert gas that is not used in making fluorescent lamps; however, the lamps are named after this gas. (.....)
9. A type of lamps whose inner surfaces are covered with phosphoric material. (Dakahlia 2012) (.....)
10. Lamps that depend on heating and glowing of the filament by electricity. (.....)
11. It prevents air from reaching the filament to protect it from burning. (.....)
12. The material that covers the inner surface of the glass tube in fluorescent lamp. (Giza 2012) (.....)
13. It carries the lamp in upright position and connects the lamp to electricity. (Beheira 2014) (.....)
14. The method of connecting electric lamps and machines at home. (Dakahlia 2019) (.....)
15. The base of light bulb that contains two pieces of lead. (Alex. 2018) (.....)
16. A method where electric lamps are connected in branching routes. (Cairo 2019) (.....)
17. It is a way in which the light bulbs are connected one after another in one route. (Alex. 2019) (.....)
18. A way of connecting the electric lamps in which all the lamps are turned off when one of them burns out. (Giza 2019) (.....)
19. A substance that is used in making the filament of the light bulb. (Beheira 2018) (.....)
20. It is a closed and continuous path through which the electric current passes. (Cairo 2014) (.....)
21. The source of electricity in the electric circuit. (.....)
22. A circuit that contains a lamp, conducting wires, a switch and a battery. (.....)





## 5 Correct the underlined words:

1.  The electric lamp converts the electric energy into kinetic energy. (Cairo 2019) (.....)
2. Newton is an American inventor who invented the electric lamp. (Alex. 2018) (.....)
3.  The electric lamp contains hydrogen gas. (Cairo 2019) (.....)
4.  The glass bulb of the light bulb contains an active gas. (Menofia 2016) (.....)



5.  The filament of the light bulb is made of carbon. (Assiut 2017) (.....)
6. The fluorescent lamp consists of one filament of tungsten. (.....)
7.  There is one kind of bases for the electric bulb. (.....)
8. Fluorescent lamp contains the inert neon gas. (Giza 2019) (.....)
9. When connecting more than one lamp in series in the electric circuit, the light intensity of lamps increases. (Beni Suef 2011) (.....)
10.  There are two connecting points at each end of the light bulb. (Aswan 2014) (.....)
11.  To connect lamps in parallel, the lamps are connected one after the other. (Giza 2019) (.....)
12.  When electric lamps are connected in series, they continue to work if a lamp is damaged. (.....)
13.  The electric lamps are connected in houses in series. (Kaf El-Sheikh 2019) (.....)
14. When connecting more than one lamp in parallel in an electric circuit, the light intensity decreases. (.....)
15. The electric current is divided into several paths in case lamps are connected in series. (.....)


### 6 Give a reason for each of the following:

1. The presence of argon gas in glowing lamps. (Kaf El-Sheikh 2019) (.....)
2. There is a glass bulb around the filament. (.....)
3.  The glass bulb is filled with inert argon gas. (Port Said 2014) (.....)
4. There are two pieces of lead in the light bulb. (Cairo 2019) (.....)
5.  There are two points of connection to each tip of the fluorescent lamp. (Dakahlia 2019) (.....)
6. The importance of the filament of the light bulb. (Alex. 2018) (.....)
7. There must be a switch in the electric circuit. (.....)
8. The presence of the battery in the electric circuit. (.....)
9.   Decorative lamps are connected in parallel not in series. (Alex. 2019) (.....)



## Lesson 1

## 7 What happens when ...?

1. There is no glass bulb in the light bulb. (Cairo 2017)
2. The two metallic pieces are not found in the base of the light bulb. (Menofia 2017)
3. The absence of the argon gas in the glass bulb of the light lamps.
4. The electric lamp contains atmospheric. (Cairo 2019)
5. A lamp connected in series in an electric circuit is burnt. (Beni Suef 2018)
6. Connecting more than one lamp in an electric circuit in parallel. (Cairo 2019)
7. Connecting more than one lamp in an electric circuit in series.
8. You make the filament of the light bulb from iron.
9.  Opening the electric circuit by using the electric switch. (Sohag 2014)
10. The light bulbs in the house are connected in series. (Damietta 2019)
11. One of the electric lamps burns out, while it is connected in parallel with the other. (Dakahlia 2019)


## 8 What is meant by ...?

1. Electric lamps.
2.  Electric circuit. (Damietta 2013)
3. Parallel connection.
4. Series connection.



**9 Compare between each of the following:**

(Ismailia 2018)

1.  Parallel connection and series connection with respect to light intensity and removing one of the lamps from the connection.  
.....
2. The light bulb and fluorescent lamp in respect of the structure, the gas used and uses.  
.....

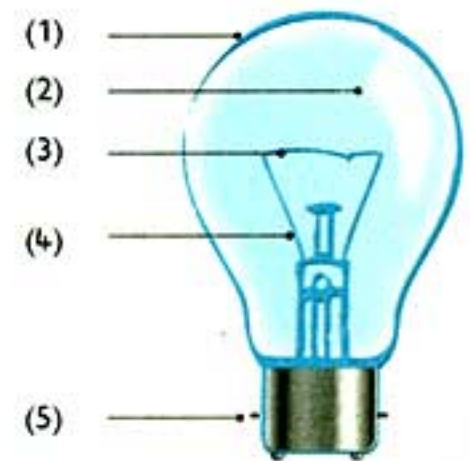
**10 Explain with drawing the components of the simple electric circuit.****11 Mention one function for each of the following:**

1. Electric lamps.  
.....
2. The tungsten filament inside the electric bulb. (Cairo 2011)  
.....
3. The fluorescent lamp. (Sohag 2017)  
.....
4. The glass bulb in the electric lamp. (Cairo 2019)  
.....
5. The base of the electric bulb. (Ismailia 2018)  
.....
6. Connecting electric lamps in parallel.  
.....
7. The inert argon gas that is used in the electric lamp. (Cairo 2019)  
.....
8. The points of connection in the fluorescent lamp. (Cairo 2019)  
.....

**12 Look at the opposite figure and then answer:**

(Giza 2018)

- a. The name of this device is .....
- b. Label the figure:  
  1. ....
  2. ....
  3. ....
  4. ....
  5. ....



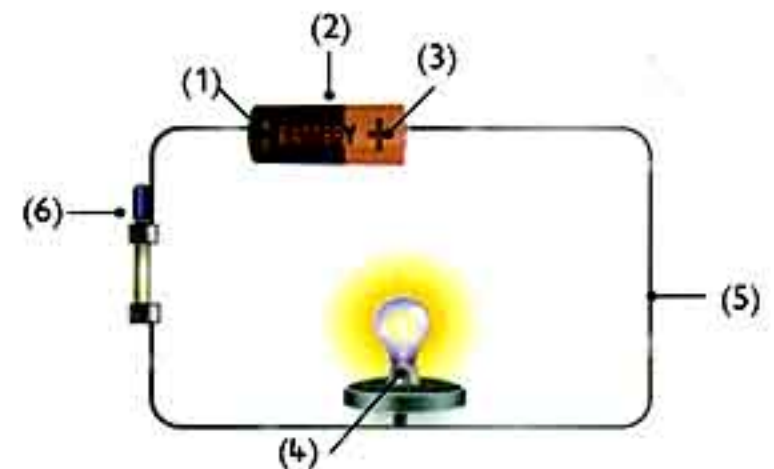


## Lesson 1

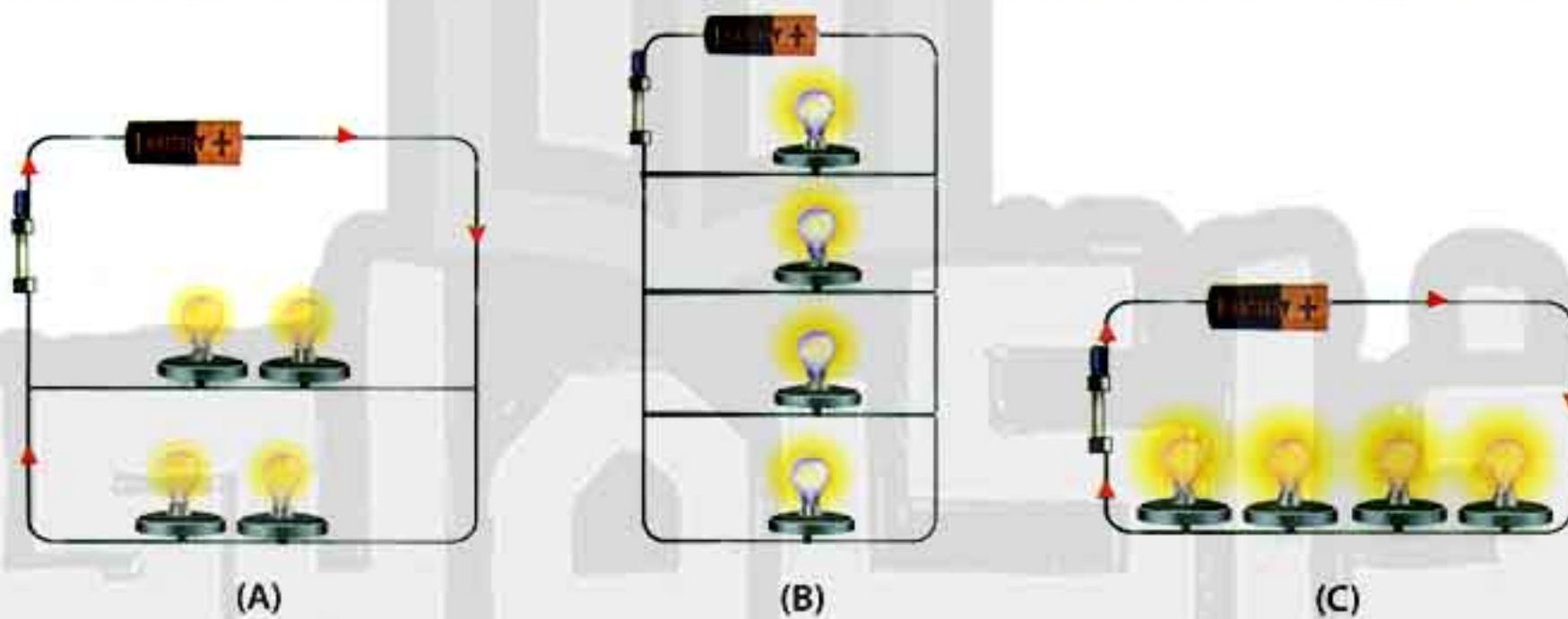
13 Look at the opposite figure and then answer:

(Ismailia 2018)

- What is the name of this figure? .....
- Write the labels.
  - .....
  - .....
  - .....
  - .....
  - .....
  - .....



14 The following figures represent three electric circuits (A), (B) and (C): (Giza 2019)



- In which circuit are the electric lamps connected in series?
- In which circuit are the electric lamps connected in parallel?

15 Choose from column (B) what suits in column (A):

(South Sinai 2013)

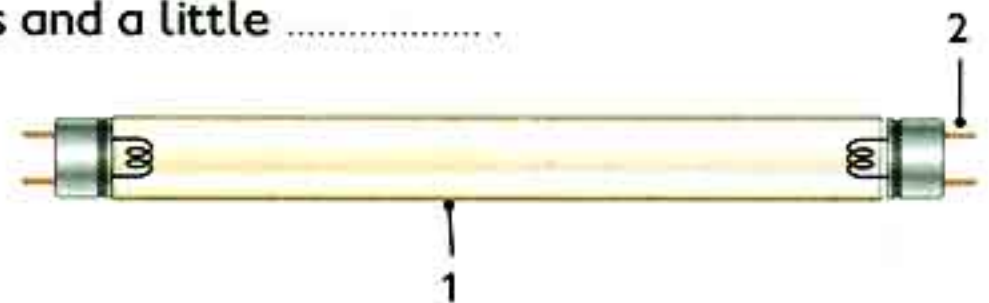
(A)

(B)

1. Light bulb	a. is in series.
2. Connecting electric lamps in houses.	b. is in parallel.
3. The filament of the light bulb.	c. changes electric energy to light energy.
	d. is/are made of nichrome wire.
	e. is/are made of tungsten wire.

16 Look at the following figure and then answer:

- The fluorescent lamp contains ..... gas and a little .....
- Label the figure:
  - .....
  - .....





# TIMSS

Like Questions

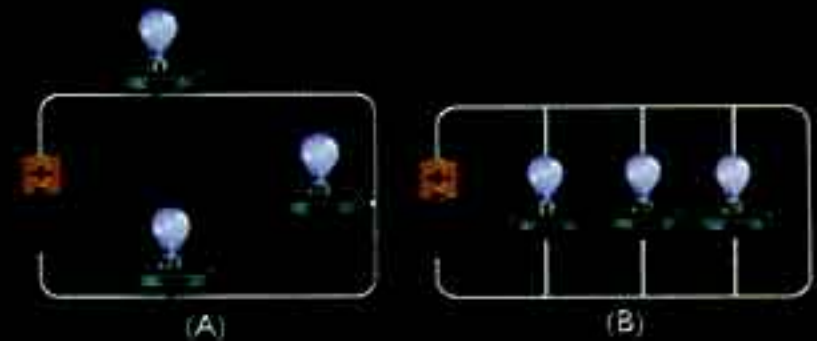
on Lesson

Answer Guide P. 8

## 1. Look at the following circuits and answer:

1. For an electric current to flow through an electric circuit you need:

- ☐ only a complete circuit  
☐ a supply current and complete circuit  
☐ only a supply current



2. Write the suitable letter in front of the correct statement which describes both figures (A) and (B):

- ☐ Two bulbs in series and one in parallel  
☐ Three bulbs in series. ☐ Three bulbs in parallel.

3. If one of the bulbs breaks in the circuits (A) and (B), what happens to the other two bulbs: choose the correct answer/s for figures (A) and (B):

- ☐ They both go out. ☐ They both remain on.  
☐ One remains on and the other goes out.

4. If a fourth bulb is added in figures (A) and (B), what happens to the other bulbs? Write the suitable letter in front of the correct statement which describes both figures (A) and (B).

- ☐ The bulbs remain the same. ☐ The bulbs become dimmer.  
☐ The bulbs become brighter.

## 2. A student sets up a circuit as shown in the diagram.

- He places each of the items that will complete the circuit to light the lamp.

a. Which items will connect the circuit between (A) - (B) to light the lamp?

Tick (✓) the correct item.

  
 Metal paper clip

  
 Plastic ruler

  
 Iron nail

  
 Eraser

b. Which name is given to the material that doesn't conduct electricity?



GEM

Exercises on Lesson

2

Answer Guide P. 9

## 1 Choose the correct answer:

- ..... is a good conductor of electricity. (Luxor 2016)  
a. Wood      b. Iron      c. Plastic      d. Glass
- All the following materials allow for the flow of the electric current except ..... (Damietta 2016)  
a. iron      b. copper      c. rubber      d. aluminum
- Dangers of electricity include .....  
a. electric fires      b. electric shock      c. electric burn      d. (a), (b) and (c)
- Among the bad conductors of electricity is ..... (Cairo 2016)  
a. aluminum      b. copper      c. iron      d. plastic
- The harm resulting from the electric shock depends on .....  
a. the intensity of the electric current only  
b. the time of the flow of the electric current  
c. the direction of the electric current  
d. the intensity and flow time of the current in the body
- Which of the following is among the causes of electrical burns? - .....  
a. A part of your body touches an electric machine that generates heat  
b. A part of your body touches a wire that is connected to electricity  
c. A part of your body touches a spark that results from an electric current  
d. (a) and (c)
- The operation of plugging more than one machine in the same socket leads to ..... (Gharbia 2017)  
a. electric shock      b. increasing electric load  
c. electric burn      d. all the pervious answers
- Among the causes of fires resulting from electricity is .....  
a. placing a device that produces heat near textiles      b. overload  
c. not disconnecting electricity from heat generator machines  
d. all the previous answers
- The handles of the electric devices are made of .....  
a. iron      b. copper      c. plastic      d. aluminum





10. Water is not used in putting out fires resulting from electricity because .....  
(Giza 2019)
- a. water is a bad conductor of electricity    b. water is a good conductor of electricity  
c. water doesn't harm rescuers    d. water limits the fire
11. The cause of the electric shock that may happen to a person is .....  
a. the electric current passing through the human body  
b. placing a device that generates heat near textiles  
c. touching flames resulting from fire  
d. touching a device that produces heat to part of the body
12. Electricity is transferred from the power stations to houses through cables covered with .....  
a. tin    b. copper    c. plastic    d. aluminum
13. Among the precautions when dealing with electricity is .....  
a. not to play with the electric connections  
b. to leave some wires uncovered  
c. to leave the electrical devices on for a long time  
d. all the previous answers
14. Electric wires must be covered with .....  
a. glass    b. plastic    c. wood    d. copper  
(Giza 2019)
15. The electric shock causes .....  
a. electric fire    b. electric burns    c. electric current    d. no correct answers
16. Connecting more than one electric device in the same socket leads to .....  
a. electric shock    b. overload    c. electric burn    d. (a) and (b)  
(Cairo 2018)

## 2 Complete the following sentences:





- Electricity is used to operate some machines such as ....., ..... and .....
- Materials are divided into ..... and ..... according to their conductivity of electricity.  
(Sharkia 2012)
- The electric shock occurs as a result of passing ..... through the human body.  
(Dakahlia 2018)
- Copper is a ..... conductor of electricity, while plastic is .....
- The substances that allow electricity to flow through are called ..... such as .....
- ..... is a good conductor of electricity, while wood is a ..... conductor of electricity.
- Substances that don't allow electricity to pass through are called .....
- ..... and ..... are some of the dangers of direct electricity. (Alex. 2019)
- Electricity flows in ..... circuits.




## Lesson 2

10.  Metallic materials are considered electric ....., while glass and rubber are considered electric ..... (Assuit 2019)
11. The two types of electric injuries are ..... and .....
12. The electric overload is the reason of ..... (Cairo 2017)
13. Water is used to put out ..... fires, while ..... is used to put out electric fires.
14. .... results from passing an electric current through the human body. (Gharbia 2014)
15.  The ..... leads to destroying the tissues of the body. (South Sinai 2019)
16. You should place a piece of ..... in the electric socket.
17. Electric cables are covered with ..... materials. (Qena 2014)
18. From the precaution in dealing with electricity ..... and ..... (Giza 2019)




### 3 Put (✓) in front of the correct statement and (X) in front of the wrong one:

1.  Plastic is a good conductor of electricity. (South Sinai 2013) ( )
2. Iron, aluminum and copper are considered electric conductors. (Luxor 2012) ( )
3.  Electric insulators allow for the flow of electric current through them. (Qena 2014) ( )
4. The electric burn causes damage of the body tissues. (Cairo 2016) ( )
5. A person suffering from an electric shock has to be isolated from the electric circuit by pushing him away with a piece of aluminum. ( )
6. Fires resulting from electricity are extinguished by water. (Cairo 2019) ( )
7. The electric fire happens when the electric current passes through the human body. ( )
8.  The electric shock occurs as a result of the electric current passing through the human body. (Sohag 2017) ( )
9. Fires, electric shocks and electric burns are among the dangers of electricity. (Cairo 2011) ( )
10. A wooden bar is used to push the injured during electric accidents. (Qena 2012) ( )
11. The human body is a bad conductor of electricity. (Cairo 2019) ( )
12. After using the electric iron, it is preferable to put it near a carpet. ( )
13. Touching spark resulting from the electric fire causes electric shock. (Matrouh 2014) ( )
14. The handles of the electric tools are made of copper. ( )
15. The electric current doesn't pass in an open electric circuit. ( )
16. Electric fire causes damage to human tissues. ( )
17.  You must avoid placing flammable materials close to electric machines that generate heat. ( )





18.  If the injured with an electric shock can't breathe, start immediately artificial respiration. ( )
19. The electric overload causes electric fires. (Cairo 2018) ( )

#### 4 Write the scientific term for each of the following:




-  Materials that allow the electric current to pass through. (Dakahlia 2019) (.....)
-  Materials that don't allow the electric current to pass through. (Giza 2019) (.....)
- A type of injuries including fires resulting from electricity, electric shock and electric burns. (Giza 2018) (.....)
- One of the electric dangers that damage body tissues. (Cairo 2019) (.....)
- A material used in making electric wires. (.....)
-  Fires that happen as a result of overheat of electric devices (overload). (Sharkia 2017) (.....)
- It occurs when the electric current passes through the human body. (Giza 2018) (.....)
- One of the dangers of electricity that results from plugging more than one device in one socket. (.....)
- One of the dangers of electricity that results from touching uncovered wire. (.....)
- Injuries caused by electricity which are not a direct cause. (Kafr El-Sheikh 2019) (.....)
- It is one of the dangers of electricity that occurs due to passing the electric current through the human body. (Qena 2019) (.....)

#### 5 Correct the underlined words:





-  Wood is considered a good conductor of electricity. (Beheira 2014) (.....)
-  Electric fires happen when electricity passes through the human body. (Aswan 2012) (.....)
- Electricity is safe if we deal with it carelessly. (.....)
- The electric shock happens when touching flames resulting from fire. (.....)
- The electric damage that causes destruction to the body tissues is called electric shock. (.....)
- Among the causes of electric fires is decreasing electric load. (.....)
- Water is not used to put out regular fires. (Ismailia 2017) (.....)




## Lesson 2

8.  Fires resulting from electricity are extinguished by water.  
(Sharkia 2012) (.....)
9.  The human body is a good conductor of electricity as it contains gases.  
(Cairo 2019) (.....)
10.  Glass is among electric conductor substances. (.....)
11. Among safety precautions when dealing with electricity is leaving electric wires uncovered. (.....)
12. Plugging more than one machine to one socket causes electric shock.  
(Giza 2019) (.....)

## 6 Give a reason for each of the following:

1. Plastic is considered an electric insulator. (Kafr El-Sheikh 2014)  
.....
2.  Water is not used to put out electric fires. (Giza 2019)  
.....
3. It is advisable not to place the heater next to the carpets and textiles.  
.....
4. Electric wires are made of copper. (Qalubia 2013)  
.....
5. Handles of screwdrivers and electric tools are made of rubber or glass.  
.....
6.  The electric cables are covered by insulating materials. (Luxor 2014)  
.....
7. It is advisable to decrease the load on the connection network in houses.  
.....
8. Uncovered electricity should never be touched.  
.....
9. It is advisable not to touch electric switches with wet hands.  
.....
10.  Not placing flammable materials close to the electric machines that generate heat. (Cairo 2019)  
.....
11.  Not placing any metallic objects inside the socket. (Giza 2018)  
.....
12. Plugging more than one machine in one socket causes electric fires. (Cairo 2019)  
.....



13.  Pushing the injured by anything that is non-conductor of electricity such as a piece of wood. (Red Sea 2012)


14.  Placing a piece of plastic in the socket. (Qena 2011)

### 7 What happens when ...?


1. Touching a source of electricity directly with a part of your body.


2. Placing an electric heater near to furniture. (Fayoum 2019)

3. Pushing a person suffering from an electric shock with an iron bar to isolate him from the source of electricity.

4.  A man touches uncovered wire that has an electric current. (Sharkia 2017)

5. Using sand to put out electric fires.

6.  Electric wires are left uncovered and non-insulated. (Fayoum 2014)

7.  Electricity is not handled cautiously.

8. Insulating the injured from electric current by pushing him with a piece of wood.

9. Putting out an electric fire by water. (Sohag 2019)

10. You insert a metallic bar in an electric socket. (Cairo 2019)

### 8 Mention one function or benefit or harm for each of the following:

1. Not disconnecting electric devices that produce heat.

2. Electric insulators. (Ismailia 2017)

3. Electric shock.



## Lesson 2

4. Electric overload.  
.....
5. Water is used as a fire extinguisher.  
.....
6. Electric burns on body tissues.  
.....
7. Copper is used in making wires.  
.....
8. Wires are covered with plastic.  
.....

**9 What are the dangers that happen in the following cases?**

1. Leaving electric wires without covering them with insulators.  
.....
2. Placing an electric device that generates heat near some clothes.  
.....
3. Operating more than one electric device through one socket.  
.....
4. Touching a wire through which an electric current is flowing, while being connected to the ground.  
.....
5. Placing electric wires under the carpet.  
.....

**10 How do you advise the following persons?**

1. Some people are putting out an electric fire using water.  
.....
2. A person is trying to save another person who is suffering from an electric shock.  
.....

**11 Mention some safety precautions when dealing with electricity.**

(Menofia 2011)

.....  
.....  
.....

**12 What are the injuries resulting from misusing electricity?**

.....  
.....



**13** Compare between electric conductors and electric insulators. (Port Said 2017)

Electric conductors	Electric insulators
.....	.....
.....	.....

**14** Define:

1. The electric shock.

.....

2. Electric fires.

.....

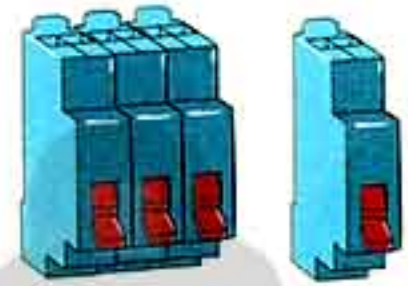
3. Direct injuries.

(Giza 2019)

**15** The opposite figure represents an automatic switch.

What is its importance in houses?

.....



**16** Examine:

The following pictures represent some negative behaviors when dealing with electricity. What is the harm caused by such behaviors?



a. ....



b. ....



c. ....



d. ....

**17** State the reasons for the fire resulting from electricity. (Giza 2012)

.....

.....

.....



I help my family prepare food at home. I prefer home-made food to fast food.





## TIMSS

Like Questions

2

on Lesson

Answer Guide P. 10

1. Look at the following pictures and then answer:



a. Specify the wrong behaviors in this house and correct them.

.....

.....

.....

b. Mention the type of electric connection in this house.

.....

2. One of your friends had an electric shock when he was playing with a wire connected to an electric source.

Rearrange the right behaviors to rescue your friend:

- ☐ a. Call the doctor immediately.
- ☐ b. Press on his chest with palms of your hands.
- ☐ c. Open up the tight clothes to facilitate his breathing.
- ☐ d. Insulate your friend from the electric current by pushing him with a piece of wood.
- ☐ e. If he can't breathe, start the artificial respiration immediately.



# Unit 2 Electric Energy

Lesson 1

## Electric lamps

Answer Guide P. 17

### Worksheet 5

#### 1 A) Choose the correct answer:

1. A /An ..... converts the electric energy into light energy.  
a. electric iron   b. electric lamp   c. electric heater   d. washing machine
2. The filament of the light bulb is made of .....  
a. tungsten   b. copper   c. iron   d. aluminum
3. A ..... prevents air from reaching the filament.  
a. glass bulb   b. copper wire  
c. a piece of lead   d. base of the light
4. All the following are parts of the fluorescent lamp except the .....  
a. points of connection   b. glass tube  
c. tungsten filament   d. base of the bulb

#### B) Give a reason for each of the following:

1. The filament of the light bulb is made of tungsten.  
.....
2. The glass bulb of the light bulb is filled with inert argon gas.  
.....
3. There are two points of connection at each tip of the fluorescent lamp.  
.....

#### 2 A) Complete the following:

1. .... and .... are kinds of electric lamps.
2. The filament of the regular electric lamp is made of ..... because it has a high .....



## Worksheets &amp; Exams

3. .... is used to prevent the tungsten filament from burning.
4. In the light bulb copper wires allow the electric current to pass from ..... and .....
5. A fluorescent lamp filled with ..... inert gas.
6. The inventor of the electric lamp is .....

## B) Put (✓) or (X) in front of each of the following:

1. Electric bulbs are one of the most popular sources of artificial light. ( )
2. The glass bulb of the electric lamp contains the atmospheric air. ( )
3. Fluorescent lamps are called neon lamps, because they contain an inert gas called neon. ( )
4. The filament of the light bulb is made of copper. ( )

## 3 A) What is meant by ...?

- Electric lamp.

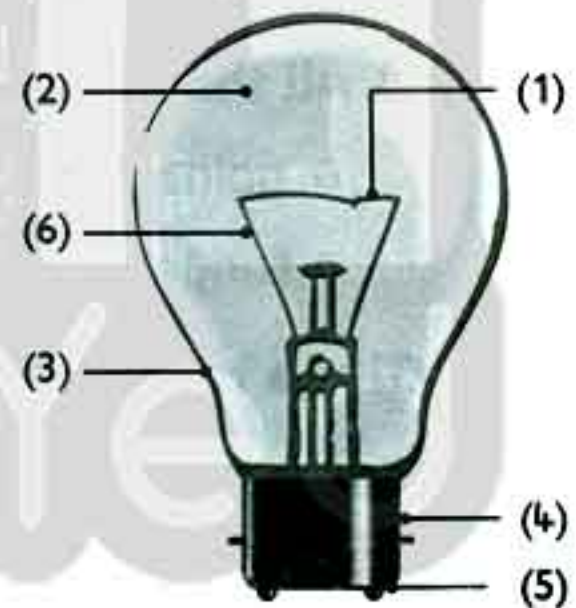
.....

## B) Look at the opposite figure, then answer:

a. What is the name of this figure? .....

b. Label the figure:

- |         |         |
|---------|---------|
| 1. .... | 2. .... |
| 3. .... | 4. .... |
| 5. .... | 6. .... |



## 4 A) What happens if ...?

1. The filament of the lamp is made of iron.

.....

2. There is air inside the glass bulb.

.....

## B) Correct the underlined words in the following sentences:

1. The glass bulb of the light bulb contains an active gas.
2. There is one kind of bases for the electric bulb.
3. Electric lamps and devices are connected in series at home.
4. The light energy is converted into electric energy in the fluorescent lamp.



## Worksheet 6

## 1 A) Put (✓) or (X) in front of each of the following sentences:

1. Lamps are connected in series in houses. ( )
2. The main source of the electric current in the electric circuit is the battery. ( )
3. If one of the lamps or electric devices at home is not working, the rest of lamps and devices keep working. ( )
4. The light intensity decreases if a circuit is connected in series by increasing the number of lamps. ( )

## B) Choose the correct answer:

1. When the electric lamp is connected in parallel with others in the electric circuit, the light intensity .....  
 a. increases      b. decreases      c. doesn't change  
 d. sometimes decreases and increases other times
2. When we connect more than one bulb in series with an electric source, the lighting of the bulb .....  
 a. decreases      b. remains as it is      c. increases      d. no correct answers
3. The light bulbs are connected in ..... in the house.  
 a. parallel      b. series  
 c. parallel and series      d. no correct answers

## 2 A) Match words from (A) with the suitable sentences from (B):

(A)	(B)
1. Electric circuit	a) It is a method where lamps are connected one after another in the electric circuit.
2. Parallel	b) It is a closed and continuous path through which the electric current passes.
3. Series	c) It is a way in which the light bulbs are connected in branching routes.
	d) It is an inert gas used to fill electric lamps.

1. ....

2. ....

3. ....





## Worksheets &amp; Exams

## B) Correct the underlined words in each of the following:

1. Open electric circuit has no gaps.
2. In series electric circuit, when one light bulb burns out, the other lamps remain light.
3. To connect the lamps in parallel, the lamps are connected one after the other.
4. Fluorescent lamp contains the inert neon gas.

## 3 A) Write the scientific term for each of the following:

1. Lamps are called neon lamps. (.....)
2. A method where the electric lamps are connected in branching routes. (.....)
3. A type of lamps whose inner surfaces are covered with phosphoric material. (.....)

## B) Give a reason for each of the following:

1. There must be a switch in the electric circuit.  
.....
2. It is advisable to use energy-saving lamps.  
.....
3. Electric lamps should be connected in parallel in houses.  
.....

## 4 A) What happens if ...?

1. There is no battery in the electric circuit.  
.....
2. The electric lamps are connected in series.  
.....

## B) Compare between connecting in series and connecting in parallel:

P.O.C	Connecting in series	Connecting in parallel
1. Light intensity		
2. The effect of burning or unscrewing any of lamps		



## Lesson 2

## Dangers of electricity and how to deal with it

Answer Guide P. 18

## Worksheet 7

## 1 A) Complete the following sentences:

1. Materials are divided into ..... and ..... according to their conductivity of electricity.
2. The two types of electric injuries are ..... and .....
3. The electric shock takes place when the ..... passes through the human body.
4. Dangers of electricity include ....., ..... and .....

## B) Classify the following materials into electric conductors and electric insulators:

Materials	Electric conductors	Electric insulators
Wood		
Iron		
Copper		
Aluminum		
Plastic		
Wool		
Rubber		
Glass		

## 2 A) Write the scientific term for each of the following:

1. One of the electric dangers that damages body tissues. (.....)
2. Substances that don't allow electricity to flow through. (.....)
3. Substances that allow electricity to flow through. (.....)

## B) What are the dangers that happen in the following cases?

1. Opening more than one electric device through one socket.
2. Leaving electric wires without covering them.





## Worksheets &amp; Exams

## 3 A) Choose the correct answer:

- Electric wires are covered with .....  
a. lead      b. copper      c. plastic      d. wood
- Plugging more than one device in one socket leads to .....  
a. electric shock      b. electric burn  
c. increasing electric load      d. all the previous answers
- ..... is a good conductor of electricity.  
a. Wood      b. Copper      c. Plastic      d. Glass

## B) Put (✓) or (X) in front of each of the following sentences:

- Plastic is a good conductor of electricity. ( )
- Electric insulators allow the flow of electric current through. ( )
- Iron, copper and rubber are electric conductors. ( )
- When putting a piece of wood in an electric circuit, the electric current flows through it. ( )

## 4 A) What happens in the following cases?

- Touching a source of electricity directly with a part of your body.  
.....

- Inserting a piece of a rubber eraser in an electric circuit.  
.....

- Putting out an electric fire by water.  
.....

## B) Give a reason for each of the following:

- Electric wires are made of copper.  
.....

- Wood is considered an electric insulator.  
.....



## Worksheet 8

## 1 A) Put (✓) or (X) in front of each of the following sentences:

1. It is advisable to put out an electric fire using water. ( )
2. We use electric insulators when we are dealing with a person suffering from an electric shock. ( )
3. The battery is not a main component in the electric circuit. ( )
4. It is preferable to use an electric switch in houses. ( )

## B) Mention factors affecting the strength of the electric shock.

.....

.....

.....

## 2 A) Give a reason for each of the following:

1. We should never push a person suffering from an electric shock using an iron bar.  
.....
2. Power cables are covered with insulators.  
.....
3. Electric wires are made of copper.  
.....

## B) Correct the underlined words:

1. Electric fires happen when electricity passes through the human body.
2. Among the causes of the electric fires is decreasing electric load.
3. Water is not used to put out regular fires.

## 3 A) Complete the following sentences:

1. The ..... leads to destroying the tissue of the body..
2. Metallic materials are considered electric .....

## B) What are the precautions in dealing with electricity?

.....

.....

.....

.....



## Worksheets &amp; Exams

## C) How would you advise the following persons?

1. Some people are putting out an electric fire using water.

.....

2. A person is trying to save another one suffering from an electric shock.

.....

## 4 A) Write the scientific term for each of the following:

1. It occurs due to the passing of an electric current through the human body.

(.....)

2. Burns resulting from electricity that damage body tissues.

(.....)

## B) What are the causes of electric fires?

.....  
 .....  
 .....  
 .....  
 .....

## C) What happens if ...?

1. Using sand to put out electric fires.

.....

2. You place an electric heater close to furniture.

.....

3. Touching an uncovered wire while touching the ground.

.....

4. Electric wires are left uncovered and non-insulated.

.....



# School BOOK Exercises

## on Unit 2

Answer Guide P. 19

### 1 Complete the following sentences:

1. .... and .... are two ways for connecting electricity.
2. .... and .... are some precautions should be taken while dealing with the electricity.
3. The simple electric circuit consists of ....., ....., ..... and .....
4. .... and .... are examples of the electric insulating materials.
5. In the case of connecting the lamps in ..... the lighting of the lamps decreases with their increase in number.

### 2 Correct the underlined words in the following sentences:

1. The electric lamp converts the electric energy to the kinetic energy.
2. The filament of the light bulb is made of carbon.
3. While connecting the lamps in parallel, the lamps are connected one after the other.
4. There are two connecting points at each end of the light bulb ends.
5. The electric fire occurs due to the passage of the electric current through the human body.
6. The electric lamps are connected in the house in series.
7. The lamps in the electric circuit continue to work when connecting in series if a lamp is damaged.
8. The glass bulb of the electric lamp contains hydrogen gas.
9. Wood is considered a good conductor of electricity.

### 3 Give a reason for each of the following:

1. The swelling of the electric lamp contains an inert gas instead of air.
2. Not placing metal things inside the socket.
3. There are connecting points at the ends of the fluorescent lamps.
4. Not placing flammable materials too close to the electric machines that generate heat.



## Worksheets &amp; Exams

**4 Compare between each of the following:**

1. Connecting electric lamps in series and connecting in parallel.
2. The light bulbs and the fluorescent lamps in respect of structure.
3. The conducting materials of electricity and the non-conducting materials.

**5 Write the scientific term of each of the following:**

1. Materials that allow the electric current to pass through. (.....)
2. Fires occur due to the increase in the temperature of the electric wires. (.....)
3. Materials that don't allow the electric current to pass through. (.....)
4. The way that the electric lamps are connected one after the other, and the intensity of the light of the lamps decreases with the increase in their number. (.....)
5. The way of converting the electric energy to light energy. (.....)
6. The way that the lamps are connected through branching routes and the light of the lamps are not affected with the increase in their number. (.....)
7. One of the dangers of the electricity occurs due to the passing of the electric current through the human body. (.....)
8. One of the dangers of electricity is that it destroys the tissues of the body. (.....)

**6 Write an explanation for each of the following:**

1. The electric shock.

.....

2. The electric fires.

.....

3. The electric lamp.

.....

4. The precautions that should be taken to deal with the electricity.

.....

.....

.....

.....





GEM

## General Tests on Unit

2

Answer Guide P. 19

(Total mark: 20)

## Test 1

## 1 A) Complete the following sentences:

(5 marks)

1. Among the methods of connecting electric lamps are connecting in ..... and connecting in .....
2. ...., iron and ..... are good conductors of electricity.
3. In the home, ..... connection of lamps is better than ..... connection.
4. .... and ..... are kinds of electric lamps.

## B) Compare between:

Natural sources of light and artificial sources of light. Give examples.

## 2 A) Correct the underlined words in the following sentences:

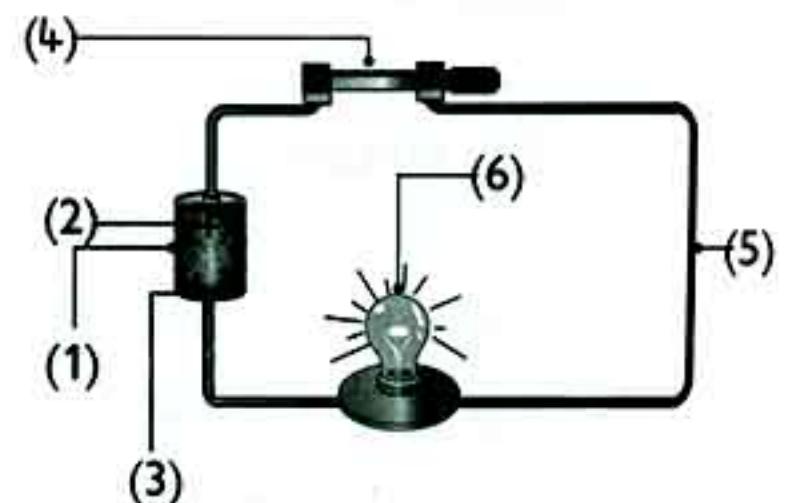
(5 marks)

1. Electric energy is converted into kinetic energy in the electric lamp.
2. The filament of the regular bulb is made of carbon.
3. On connecting in parallel, lamps are connected one after another.
4. The regular lamp has two conducting points at each of its two ends.
5. Electric fires happen when electricity passes in the human body.
6. Electric lamps are connected in series in houses.
7. The glass bulb of the regular lamp contains hydrogen gas.
8. Wood is a good conductor of electricity.

## B) Label the opposite figure:

1. ....
2. ....
3. ....
4. ....
5. ....
6. ....

• The function of no. (4): .....



GEM / Science / Primary 6

27



## Worksheets &amp; Exams

## 3 A) Write the scientific term:

(5 marks)

1. Substances that allow the electric current to pass through. (.....)
2. Fires that happen when electric devices become overheated. (.....)
3. Substances that don't allow the electric current to pass through. (.....)
4. A method where lamps are connected one after another. (.....)
5. A method where lamps are connected through branches and the light intensity is not affected. (.....)
6. A device that changes electric energy into light energy. (.....)
7. One of the dangers of electricity that happens when the electric current passes through the human body. (.....)
8. One of the dangers of electricity that causes damage to the body tissues. (.....)

## B) Mention the way in which light bulbs are connected in the home. (Give reasons)

.....

.....

## 4 A) Give a reason for each of the following:

(5 marks)

1. The glass bulb of the electric lamp contains inert gas instead of air.  
.....
2. It is advisable not to insert metal objects inside the electric socket.  
.....
3. The existence of conducting points at the ends of the fluorescent lamp.  
.....
4. It is advisable not to place flammable substances beside electric devices that produce heat.  
.....

## B) Put (✓) or (X) in front of each of the following sentences:

1. The light intensity increases in the case of series connection. ( )
2. The electric circuit is an open path through which the electric current passes. ( )
3. The electric fire happens when the human body touches an electric device that produces heat. ( )
4. Copper is a good conductor of electricity. ( )
5. The electric shock may cause death. ( )
6. A wooden bar is used to push the injured during electric accidents. ( )



(Total mark: 20)

## Test 2

## 1 A) Correct the underlined words in the following sentences:

(5 marks)

1. The light intensity of electric lamps decreases by increasing their number when being connected in parallel.
2. Electricity is safe when we deal with it carelessly.
3. A person suffering from an electric shock is isolated from the electric circuit by an iron bar.
4. Water is not used in putting out electric fires because it is a bad conductor of electricity.

## B) What is the importance of each of the following?

1. Covering power cables with insulating substances.  
.....
2. The presence of a battery in the electric circuit.  
.....

## 2 A) Put (✓) or (X) in front of each of the following sentences:

(5 marks)

1. All the gaseous lamps contain neon gas. ( )
2. There is only one type of bases for the regular electric bulb. ( )
3. Among safety precautions when dealing with electricity is not leaving electric wires uncovered. ( )
4. The electric shock causes damage to the body tissues. ( )

## B) Compare between connecting in series and connecting in parallel.

P.O.C	Connecting in series	Connecting in parallel
1. Way of connection		
2. Light intensity		
3. The effect of burning or unscrewing any of lamps		





## Worksheets &amp; Exams

## 3 A) What happens in the following cases?

(5 marks)

1. Using a filament of lead in the regular bulb.

.....

2. Connecting the electric lamps in series connection.

.....

3. The absence of mercury vapor in the fluorescent lamp.

.....

## B) Give a reason for each of the following:

1. There is a glass bulb around the filament.

.....

2. The presence of the battery in the electric circuit.

.....

## 4 A) Complete the following sentences:

(5 marks)

1. .... and .... are examples of electric insulators.

2. The simple electric circuit consists of ..... and .....

3. The electric overload is the reason of .....

4. The damage caused by electricity and destroying the body tissues is called .....

## B) What is the function of each of the following?

1. Conducting points in the fluorescent lamp.

.....

2. Tungsten filament.

.....

3. The electric switch in the electric circuit.

.....